

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: DAWN GARRETT Examiner #: 76107 Date: 12/12/2005  
Art Unit: 1774 Phone Number ~~25~~ 2-1523 Serial Number: 10/735,700  
Mail Box and Bldg/Room Location: Room 10C79 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.  
\*\*\*\*\*

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Organic Electroluminescent Element  
Inventors (please provide full names): Toshihiro Ise, Tatsuya Igarashi, Hisashi Okada

Earliest Priority Filing Date: 2002-365281 Japan 12/17/02  
\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please search:  
the formula E-I <sup>(see cl. 1)</sup> as described  
on the attached election of species page

Also search separately:  
the H-4 formula (see cl. 9)  
as described in the election of species section, attached  
If few hits are obtained for this search,  
please broaden the search to other  
possibilities listed for the formula.

SCIENTIFIC REFERENCE BR  
Sci & Tech Inf. Cntr  
DEC 13 2005  
Pat. & T.M. Office

Thank you. SEE ATTACHED CLAIMS + ELECTION

STAFF USE ONLY		Type of Search	Vendors and cost where applicable
Searcher: <u>ES</u>	NA Sequence (#) _____	STN _____	
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____	
Searcher Location: _____	Structure (#) _____	Questel/Orbit _____	
Date Searcher Picked Up: _____	Bibliographic _____	Dr. Link _____	
Date Completed: <u>9-14-05</u>	Litigation _____	Lexis/Nexis _____	
Searcher Prep & Review Time: _____	Fulltext _____	Sequence Systems _____	
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____	
Online Time: _____	Other _____	Other (specify) _____	

=> file reg

FILE 'REGISTRY' ENTERED AT 22:58:18 ON 14 DEC 2005

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FILE 'REGISTRY' ENTERED AT 22:25:48 ON 14 DEC 2005

E IMIDAZOPYRIDINE

L1 14 S E3

FILE 'LREGISTRY' ENTERED AT 22:28:56 ON 14 DEC 2005

L2 STR

L3 STR

FILE 'REGISTRY' ENTERED AT 22:33:10 ON 14 DEC 2005

L4 50 S L2

FILE 'LREGISTRY' ENTERED AT 22:34:22 ON 14 DEC 2005

L5 STR L2

FILE 'REGISTRY' ENTERED AT 22:35:27 ON 14 DEC 2005

L6 13 S L5

L7 STR L5

L8 50 S L7

L9 12116 S L7 FUL

SAV TEM L9 GAR700B/A

L10 0 S L7 AND L3 SSS SAM SUB=L9

L11 STR L3

FILE 'HCAPLUS' ENTERED AT 22:40:24 ON 14 DEC 2005

L12 1585 S ISE ?/AU

L13 13173 S IGARASHI ?/AU

L14 40529 S OKADA ?/AU

L15 8 S L12 AND L13 AND L14

SEL L15 1-8 RN

FILE 'REGISTRY' ENTERED AT 22:40:39 ON 14 DEC 2005

L16 57 S E1-E57

L17 4 S L16 AND L9

FILE 'LREGISTRY' ENTERED AT 22:42:14 ON 14 DEC 2005

L18 STR

FILE 'REGISTRY' ENTERED AT 22:45:50 ON 14 DEC 2005

L19 1 S L7 AND L18 SSS SAM SUB=L9  
L20 12 S L7 AND L18 SSS FUL SUB=L9  
SAV L20 GAR700C/A

FILE 'CAOLD' ENTERED AT 22:46:33 ON 14 DEC 2005

L21 0 S L20

FILE 'ZCAPLUS' ENTERED AT 22:46:41 ON 14 DEC 2005

L22 15 S L20

FILE 'HCA' ENTERED AT 22:46:49 ON 14 DEC 2005

L23 15 S L20  
L24 98759 S (ELECTROLUM!N? OR ORGANOLUM!N? OR (ELECTRO OR ORGANO OR  
L25 55596 S (ELECTRON# OR E) (2A) (TRANSPORT? OR MIGRAT? OR TRANSMIGR  
L26 12 S L23 AND (L24 OR L25)  
L27 5 S L26 AND (1840-2002/PY OR 1840-2002/PRY)

FILE 'LREGISTRY' ENTERED AT 22:50:23 ON 14 DEC 2005

L28 STR L7

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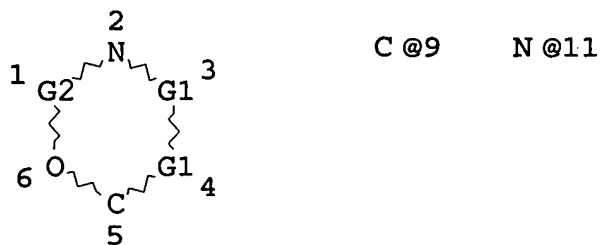
L29 50 S L28 SSS SAM SUB=L9  
L30 STR L28  
L31 22 S L30 SSS SAM SUB=L9  
L32 396 S L30 SSS FUL SUB=L9  
SAV L32 GAR700D/A  
L33 254 S L32 AND ZN/ELS  
L34 142 S L32 NOT L33

FILE 'HCA' ENTERED AT 22:56:16 ON 14 DEC 2005

L35 68 S L34  
L36 220 S L33  
L37 59 S L35 AND (L24 OR L25)  
L38 151 S L36 AND (L24 OR L25)  
L39 46 S L37 AND (1840-2001/PY OR 1840-2001/PRY)  
L40 105 S L38 AND (1840-2001/PY OR 1840-2001/PRY)  
L41 25 S L39 AND L40  
L42 23 S L41 NOT L27

FILE 'REGISTRY' ENTERED AT 22:58:18 ON 14 DEC 2005

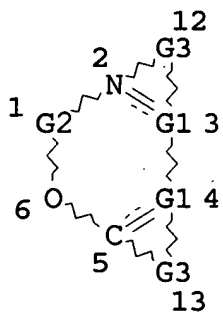
=> d l32 que stat  
L7 STR



VAR G1=9/11  
 VAR G2=LI/BE/NA/MG/AL/K/CA/SC/TI/V/CR/MN/FE/CO/NI/CU/ZN/GA/GE  
 NODE ATTRIBUTES:  
 CONNECT IS E3 R AT 9  
 CONNECT IS E3 R AT 11  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE  
 L9 12116 SEA FILE=REGISTRY SSS FUL L7  
 L30 STR



VAR G1=C/N  
 VAR G2=AL/ZN  
 REP G3=(3-4) A  
 NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 8

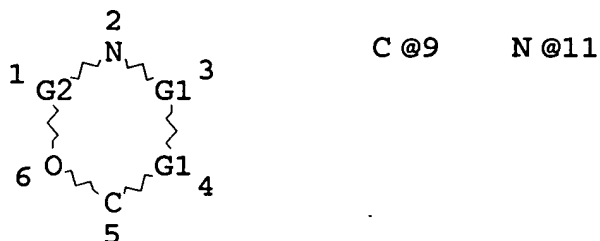
STEREO ATTRIBUTES: NONE

L32 396 SEA FILE=REGISTRY SUB=L9 SSS FUL L30

100.0% PROCESSED 1009 ITERATIONS  
SEARCH TIME: 00.00.01

396 ANSWERS

=> d 120 que stat  
L7 STR



VAR G1=9/11

VAR G2=LI/BE/NA/MG/AL/K/CA/SC/TI/V/CR/MN/FE/CO/NI/CU/ZN/GA/GE

NODE ATTRIBUTES:

CONNECT IS E3 R AT 9

CONNECT IS E3 R AT 11

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

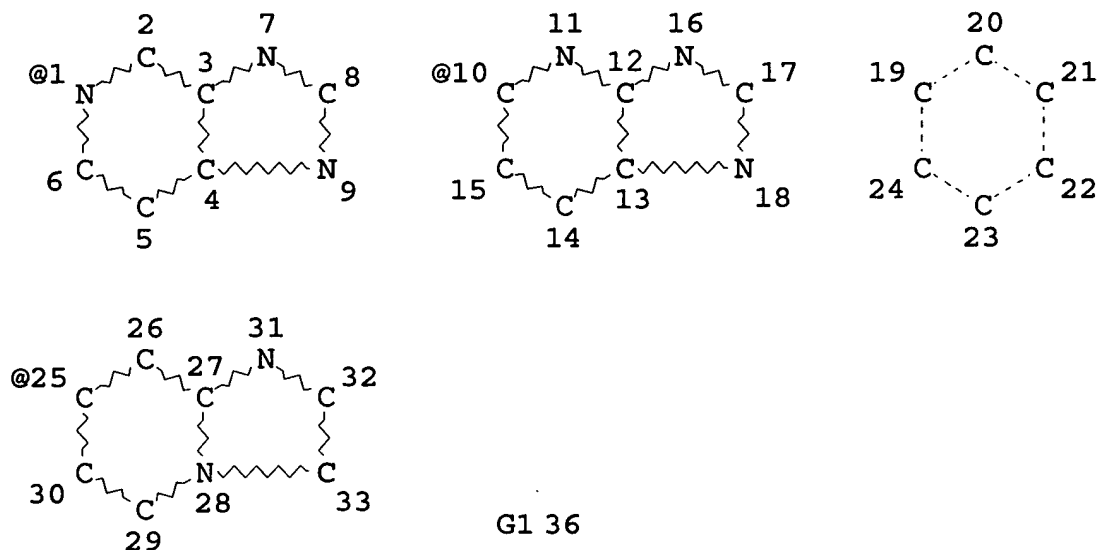
RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE

L9 12116 SEA FILE=REGISTRY SSS FUL L7

L18 STR



VAR G1=1/10/25

NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 34

STEREO ATTRIBUTES: NONE

L20 12 SEA FILE=REGISTRY SUB=L9 SSS FUL L7 AND L18

100.0% PROCESSED 41 ITERATIONS

12 ANSWERS

SEARCH TIME: 00.00.01

=> file hca

FILE 'HCA' ENTERED AT 22:58:42 ON 14 DEC 2005

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=> d l27 1-5 cbib abs hitstr hitind

L27 ANSWER 1 OF 5 HCA COPYRIGHT 2005 ACS on STN

141:147852 Organic electroluminescent device. Igarashi,

Tatsuya; Watanabe, Saisuke; Ise, Toshihiro; Okada, Hisashi; Nii, Kazumi (Fuji Photo Film Co., Ltd., Japan). PCT Int. Appl. WO 2004062324 A1 20040722, 92 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2003-JP17048 20031226. PRIORITY: JP 2002-381014 20021227; JP 2003-409183 20031208.

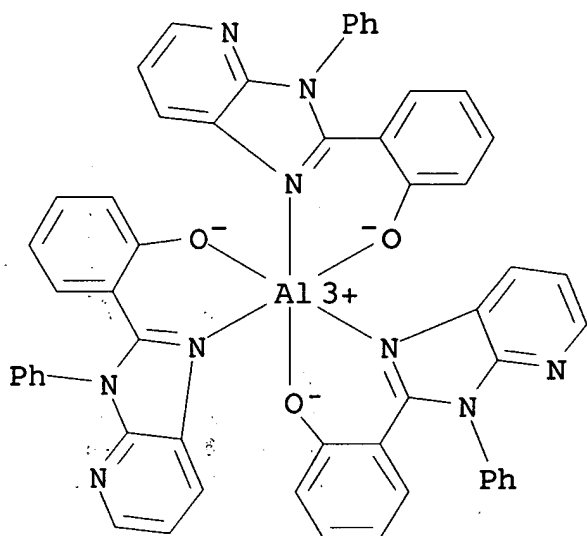
AB Org. **electroluminescent** devices which comprise a pair of electrodes; and .gtoreq.1 org. layer between the pair of electrodes, the org. layers including a luminescent layer, are described in which the luminescent layer contains .gtoreq.1 **electron injection/transport** compd., .gtoreq.1 hole injection/transport compd., and .gtoreq.1 green or blue phosphorescent compd.; and the **electron injection/transport** compd. and the hole injection/transport compd. each has a min. triplet exciton energy value which is equal to or more than that of the green or blue phosphorescent compd. Preferably, the hole injection/transport compd. is an optionally substituted pyrrole compd. and the **electron injection/transport** compd. is a heterocyclic compd. contg. .gtoreq.2 nitrogen atoms.

IT 303049-16-3

(org. **electroluminescent** device with emitting layers including hole- and **electron-transporting** materials)

RN 303049-16-3 HCA

CN Aluminum, tris[2-(3-phenyl-3H-imidazo[4,5-b]pyridin-2-yl-.kappa.N1)phenolato-.kappa.O]- (9CI) (CA INDEX NAME)



- IC ICM H05B033-14  
ICS H05B033-22; C09K011-06
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 76
- ST org **electroluminescent** device **electron** hole transporting emitting layer
- IT **Electroluminescent** devices  
(org.; org. **electroluminescent** device with emitting layers including hole- and **electron-**transporting materials)
- IT 212-74-8, Tetraphenylene 992-04-1, Hexaphenylbenzene 15082-28-7,  
PBD 25067-59-8, Polyvinylcarbazole 58328-31-7, CBP 94928-86-6,  
Tris(2-phenylpyridine) iridium 134984-37-5 139092-78-7  
148044-07-9 303049-16-3 351863-09-7 462648-27-7  
714215-62-0  
(org. **electroluminescent** device with emitting layers including hole- and **electron-transporting** materials)
- L27 ANSWER 2 OF 5 HCA COPYRIGHT 2005 ACS on STN
- 141:131052 Organic **electroluminescent** device with **light-emitting** layer containing a metal complex as a host material. Igarashi, Tatsuya; Ise, Toshihiro (Fuji Photo Film Co., Ltd., Japan). U.S. Pat. Appl. Publ. US 2004137267 A1 20040715, 20 pp. (English). CODEN: USXXCO. APPLICATION: US 2003-738307 20031218. PRIORITY: JP 2002-382454 20021227.
- AB Org. **electroluminescent** devices are described which comprise a pair of electrodes; and at least one org. compd. layer



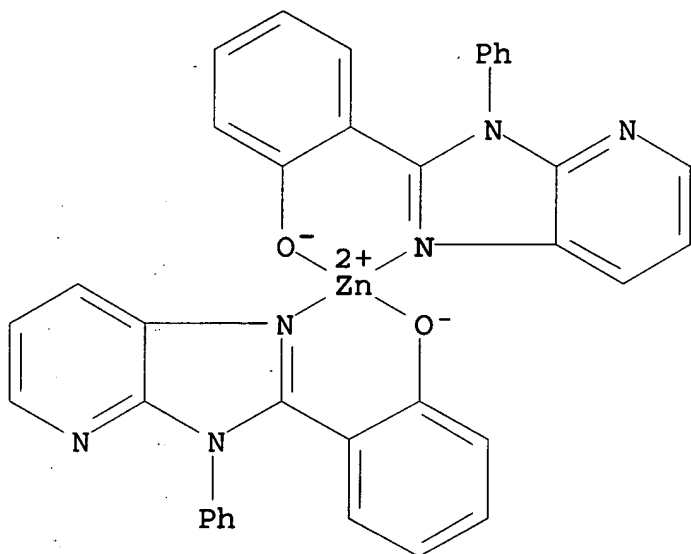
including a **light-emitting** layer between the pair of electrodes, where the **light-emitting** layer contains at least one host material and at least one luminescent material, and the host material is a metal complex contg. a metal in groups 4 to 11 or periods 5 to 6 of the Periodic Table.

IT 303049-17-4

(org. **electroluminescent** device with **light-emitting** layer contg. metal complex as host material)

RN 303049-17-4 HCA

CN Zinc, bis[2-(3-phenyl-3H-imidazo[4,5-b]pyridin-2-yl-.kappa.N1)phenolato-.kappa.O]-, (T-4) - (9CI) (CA INDEX NAME)



IC ICM B32B009-00

ICS B32B019-00

INCL 428690000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 76, 78

ST org **electroluminescent** device metal complex host  
**OLED**

IT **Electroluminescent** devices

(org. **electroluminescent** device with **light-emitting** layer contg. metal complex as host material)

IT Rare earth complexes

Transition metal complexes

(org. **electroluminescent** device with **light-emitting** layer contg. metal complex as host material)

IT **Luminescent** substances

## Phosphorescent substances

(org. electroluminescent device with  
light-emitting layer contg. metal complex as  
host material and)

IT 7439-89-6D, Iron, compds. 7439-96-5D, Manganese, compds.  
7439-98-7D, Molybdenum, compds. 7440-02-0D, Nickel, compds.  
7440-04-2D, Osmium, compds. 7440-05-3D, Palladium, compds.  
7440-15-5D, Rhenium, compds. 7440-17-7D, Rubidium, compds.  
7440-18-8D, Ruthenium, compds. 7440-22-4D, Silver, compds.  
7440-24-6D, Strontium, compds. 7440-30-4D, Thulium, compds.  
7440-31-5D, Tin, compds. 7440-32-6D, Titanium, compds.  
7440-33-7D, Tungsten, compds. 7440-36-0D, Antimony, compds.  
7440-39-3D, Barium, compds. 7440-46-2D, Cesium, compds.  
7440-50-8D, Copper, compds. 7440-54-2D, Gadolinium, compds.  
7440-57-5D, Gold, compds. 7440-67-7D, Zirconium, compds.  
7440-74-6D, Indium, compds.

(org. electroluminescent device with light-  
emitting layer contg. metal complex as host material)

IT 79183-73-6 82312-83-2 94928-86-6, Tris(2-phenylpyridine),  
iridium 123847-85-8, NPD 134984-37-5 139092-78-7  
303049-17-4 358974-66-0 359014-72-5 376367-93-0  
377092-10-9 387859-70-3 435294-03-4 439801-48-6 690977-83-4  
693794-98-8

(org. electroluminescent device with light-  
emitting layer contg. metal complex as host material)

L27 ANSWER 3 OF 5 HCA COPYRIGHT 2005 ACS on STN  
137:391157 Organic electroluminescent devices with good color,  
brightness, and durability. Igarashi, Tatsuya (Fuji Photo Film Co.,  
Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002338957 A2  
20021127, 29 pp. (Japanese). CODEN: JKXXAF. APPLICATION:  
JP 2001-143414 20010514.

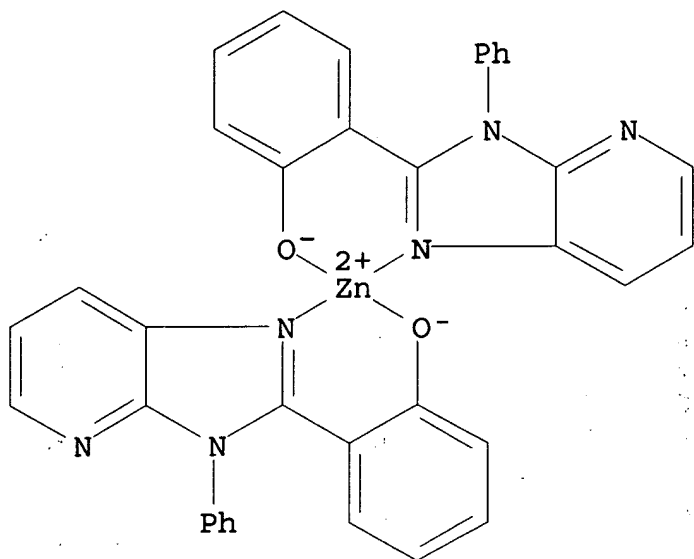
AB The device, useful for displays, backlights, etc., has light  
-emitting layers contg. (A) Ar32Ar31Ar(Ar11Ar12)Ar21Ar22  
(Ar11, Ar21, Ar31 = arylene; Ar12, Ar22, Ar32 = H, substituent;  
Ar11, Ar21, Ar31, Ar12, Ar22, Ar32 = condensed ring aryl, condensed  
ring heteroaryl; Ar = arylene, heteroarylene) and (B) metal  
complexes.

IT 303049-17-4

(org. EL devices with good color, brightness, and  
durability)

RN 303049-17-4 HCA

CN Zinc, bis[2-(3-phenyl-3H-imidazo[4,5-b]pyridin-2-yl-  
.kappa.N1)phenolato-.kappa.O]-, (T-4)- (9CI) (CA INDEX NAME)



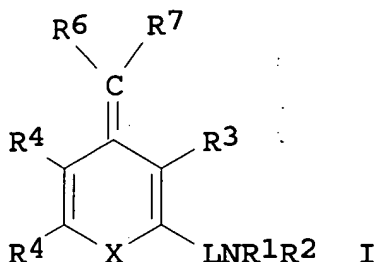
- IC ICM C09K011-06  
ICS C09K011-06; C07C015-20; C07C015-38; H05B033-14; C07F003-06;  
C07F005-06
- CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)
- ST org EL display phosphor triaryl benzene;  
electroluminescent device color durability metal complex
- IT Electroluminescent devices  
(displays; org. EL devices with good color, brightness,  
and durability)
- IT Luminescent screens  
Phosphors  
(electroluminescent; org. EL  
devices with good color, brightness, and durability)
- IT 23467-27-8 146162-49-4 213818-07-6 291758-52-6  
303049-17-4 475983-74-5 475983-75-6  
(org. EL devices with good color, brightness, and  
durability)
- IT 151965-47-8P 349666-25-7P 349666-26-8P 349666-27-9P  
349666-28-0P 349666-29-1P  
(org. EL devices with good color, brightness, and  
durability)
- IT 349666-30-4P 474302-40-4P  
(org. EL devices with good color, brightness, and  
durability)
- IT 90-44-8, Anthrone 626-39-1, 1,3,5-Tribromobenzene 636-28-2,  
1,2,4,5-Tetrabromobenzene 68572-88-3 349666-24-6  
(org. EL devices with good color, brightness, and

durability)

L27 ANSWER 4 OF 5 HCA COPYRIGHT 2005 ACS on STN

137:301832 Luminescent element composition. Nii, Kazumi; Okada, Hisashi (Fuji Photo Film Co., Ltd., Japan). PCT Int. Appl. WO 2002079343 A1 20021010, 101 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2002-JP3101 20020328. PRIORITY: JP 2001-101027 20010330.

GI



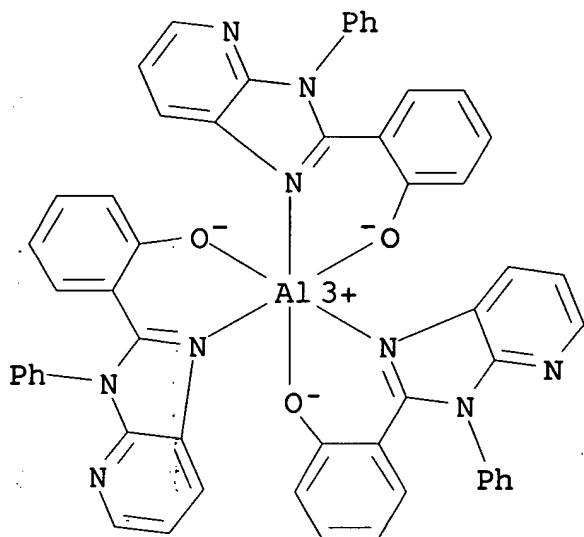
AB A luminescent element characterized by comprising a substrate, a pair of electrodes formed thereover, .gtoreq.1 luminescent layer which is disposed between the electrodes and comprises a luminescent material represented by a general formula [I, R1-R5 = H, a substituent; X = O, S, or NR7 (R7 = H or a substituent); L = a connecting group having a conjugated bond; and R6, R7 = H, a substituent, provided that .gtoreq.1 of R6 and R7 = an electron-attracting group.] and a host material, and an org. film which is disposed between the luminescent layer and the cathode so as to be in contact with the luminescent layer and has an ionization potential higher than that of the host material. The compd. represented by I may be in the form of a metal complex.

IT 303049-16-3

(luminescent element contg. indandione derivs.)

RN 303049-16-3 HCA

CN Aluminum, tris[2-(3-phenyl-3H-imidazo[4,5-b]pyridin-2-yl-.kappa.N1)phenolato-.kappa.O]- (9CI) (CA INDEX NAME)



IC ICM C09K011-06  
ICS H05B033-14; H05B033-22  
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
ST org **electroluminescent** device indanedion  
IT Cathodes  
Electrodes  
Electroluminescent devices  
Ionization potential  
Luminescent substances  
(luminescent element contg. indandione derivs.)  
IT 1450-63-1 2085-33-8, Tris(8-quinolinolato)aluminum 4733-39-5  
15082-28-7 50926-11-9, ITO 65181-78-4, TPD 151965-47-8  
161001-49-6 255709-81-0 **303049-16-3** 313950-73-1  
457286-70-3 467449-38-3 467449-45-2  
(luminescent element contg. indandione derivs.)  
L27 ANSWER 5 OF 5 HCA COPYRIGHT 2005 ACS on STN  
133:327749 Organic **electroluminescent** materials having azole ring, azole compound complexes, and **electroluminescent** devices. Igarashi, Tatsuya; Okada, Hisashi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2000302754 A2 20001031, 27 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-340788 19991130. PRIORITY: JP 1999-36107 19990215.  
GI

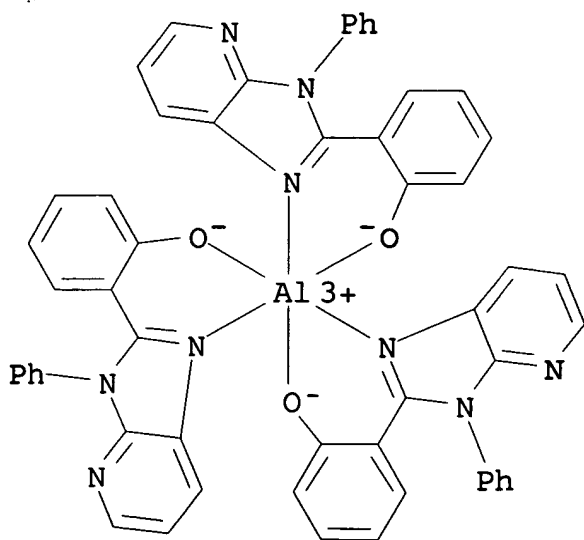
AB The **electroluminescent** materials comprise compds. having partial structure I [R11, R12 = H, substituent; R11 and R12 do not form a ring; X1 = O, S, (un)substituted N, CR13R14; R13, R14 = H, substituent; Y1 = O, S, (un)substituted N; M1 = metal ion, H; Z1 = at. group to form a 5-6-membered ring] or II (Q1 = at. group to form a heterocycle; X2, Y2, M2, and Z2 = any group given for X1, Y1, M1, and Z1, resp.). Also claimed are azole compd. complexes III (R21, R22 = H, alkyl, aryl, heteroaryl; X3 and Y3 = any group given for X1 and Y1, resp.; M3 = metal ion; q1 .gtoreq. 1; L1 = ligand; m1 .gtoreq. 0; Z3 has no definition) and IV (Q2, X4, and Y4 = any group given for Q1, X1, and Y1, resp.; M4 = metal ion; q2 .gtoreq. 1; L2 = ligand; m2 .gtoreq. 0) and org. **electroluminescent** devices having which has .gtoreq.1 layer contg. .gtoreq.1 selected from I, II, III, and IV. A mixt. of salicylic acid, AcOEt, and DMF was treated with (COCl)<sub>2</sub> at room temp. for 30 min and then treated with benzoin and Et<sub>3</sub>N at room temp. for 3 h to give 2-HOC<sub>6</sub>H<sub>4</sub>CO<sub>2</sub>CHPhCOBz. This was treated with AcONH<sub>4</sub> in AcOH under reflux and the resulting triphenyloxazole deriv. was further treated with Zn(OAc)<sub>2</sub> to give III (R21 = R22 = Ph, X3 = Y3 = O, M3 = Zn, q1 = 2, m1 = 0, Z3 = at. group to give a condensed benzene ring). An **electroluminescent** device having a luminescent layer contg. the complex showed blue emission.

IT 303049-16-3P 303049-17-4P

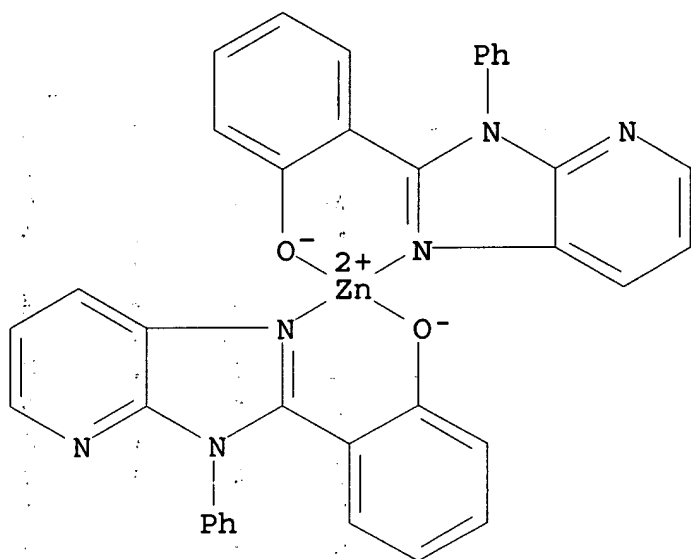
(prepn. of azole compds. and their metal complexes for **electroluminescent** devices)

RN 303049-16-3 HCA

CN Aluminum, tris[2-(3-phenyl-3H-imidazo[4,5-b]pyridin-2-yl-.kappa.N1)phenolato-.kappa.O]- (9CI) (CA INDEX NAME)



RN 303049-17-4 HCA  
 CN Zinc, bis[2-(3-phenyl-3H-imidazo[4,5-b]pyridin-2-yl-  
 .kappa.N1)phenolato-.kappa.O]-, (T-4)- (9CI) (CA INDEX NAME)



IC ICM C07D207-333  
 ICS C07D233-64; C07D263-32; C07D277-24; C07D277-28; C07D413-04;  
 C07D471-04; C07D487-04; C07D491-048; C07D495-14; C09K011-06;  
 H05B033-14; H05B033-22  
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 Section cross-reference(s): 28, 78  
 ST hydroxyphenylazole metal complex **electroluminescent**  
 device; oxazole hydroxyphenyl complex **electroluminescent**  
 device  
 IT **Electroluminescent devices**  
 (prepn. of azole compds. and their metal complexes for  
**electroluminescent devices**)  
 IT 291758-52-6P 303049-10-7P 303049-11-8P 303049-12-9P  
 303049-16-3P 303049-17-4P  
 (prepn. of azole compds. and their metal complexes for  
**electroluminescent devices**)  
 IT 62-53-3, Benzenamine, reactions 69-72-7, reactions 79-37-8,  
 Oxalyl chloride 90-02-8, Salicylaldehyde, reactions 119-53-9,  
 Benzoin 5470-18-8, 2-Chloro-3-nitropyridine  
 (prepn. of azole compds. and their metal complexes for  
**electroluminescent devices**)  
 IT 34949-41-2P 291751-55-8P 303049-09-4P 303049-13-0P  
 303049-14-1P 303049-15-2P  
 (prepn. of azole compds. and their metal complexes for

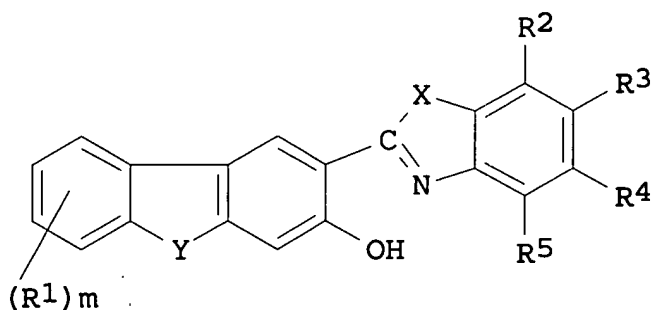
electroluminescent devices)

=> d 142 1-23 cbib abs hitstr hitind

L42 ANSWER 1 OF 23 HCA COPYRIGHT 2005 ACS on STN

138:409101 **Electroluminescent** device with dibenzofuran, fluorenone, or fluorene derivative. Enomoto, Kazuhiro; Nishimura, Kazuhito (Sharp Corp., Japan). Jpn. Kokai Tokkyo Koho JP 2003147344 A2 20030521, 14 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-345020 20011109.

GI



AB The invention refers to an **electroluminescent** device comprising I [X = O, S or NH; Y = O, C:O, or CH<sub>2</sub>; R<sub>1</sub> = H, halo, lower alc. or may join to form aliph. rings when m < 1; R<sub>2</sub>-5 = lower alc., alkoxy, halo or H, and adjacent groups may join to form arom. rings] for high **electron transport** and thermal stability.

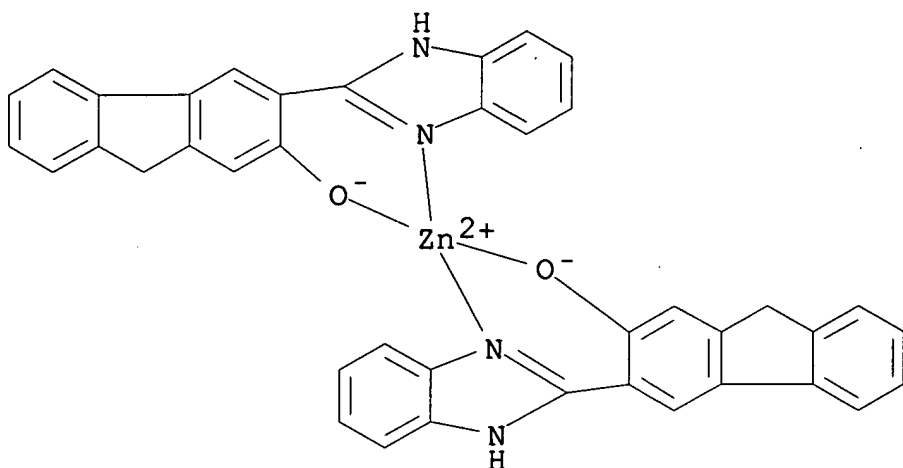
IT 528578-74-7 528578-76-9 528578-77-0  
528578-78-1 528578-79-2 528578-80-5  
528578-81-6

(**electroluminescent** device with dibenzofuran, fluorenone, or fluorene deriv.)

RN 528578-74-7 HCA

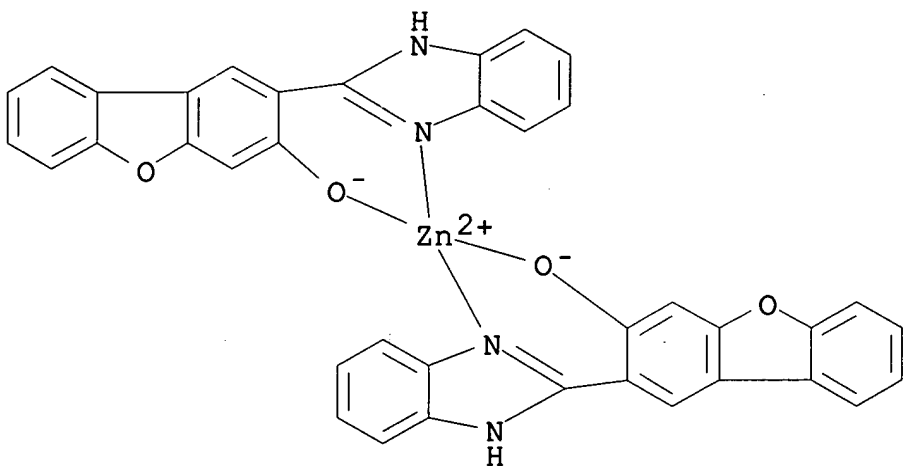
CN Zinc, bis[3-(1H-benzimidazol-2-yl-.kappa.N3)-9H-fluoren-2-olato-.kappa.O]-, (T-4)- (9CI) (CA INDEX NAME)





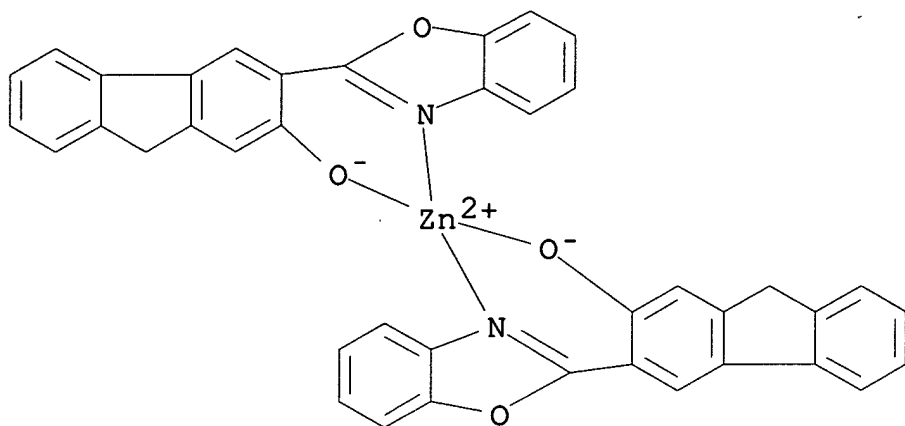
RN 528578-76-9 HCA

CN Zinc, bis[2-(1H-benzimidazol-2-yl-.kappa.N3)-3-dibenzofuranolato-.kappa.O3]-, (T-4)- (9CI) (CA INDEX NAME)



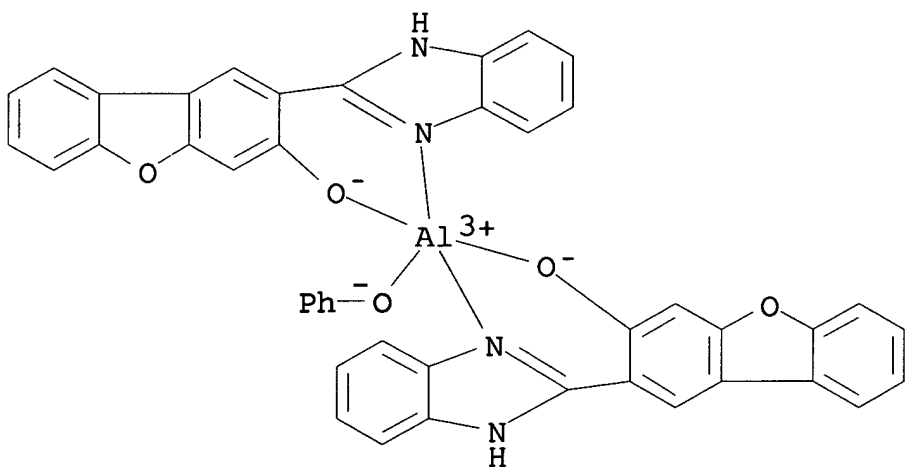
RN 528578-77-0 HCA

CN Zinc, bis[3-(2-benzoxazolyl-.kappa.N3)-9H-fluoren-2-olato-.kappa.O]-, (T-4)- (9CI) (CA INDEX NAME)



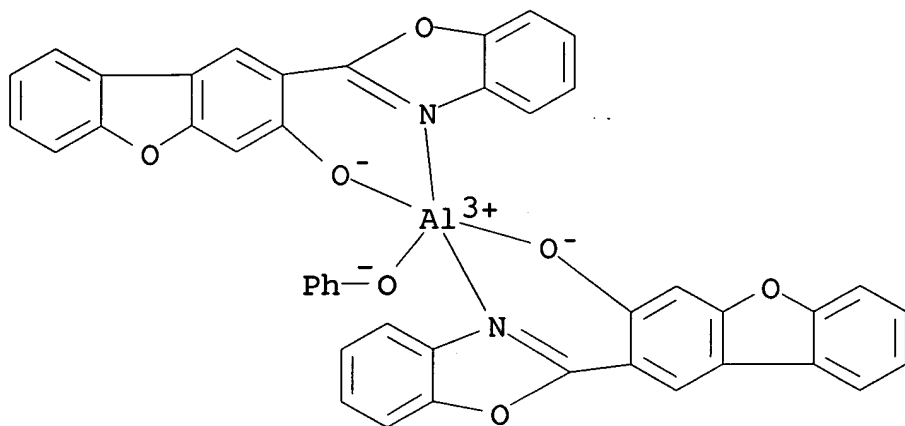
RN 528578-78-1 HCA

CN Aluminum, bis[2-(1H-benzimidazol-2-yl)-.kappa.N3)-3-dibenzofuranolato-.kappa.O3]phenoxy- (9CI) (CA INDEX NAME)



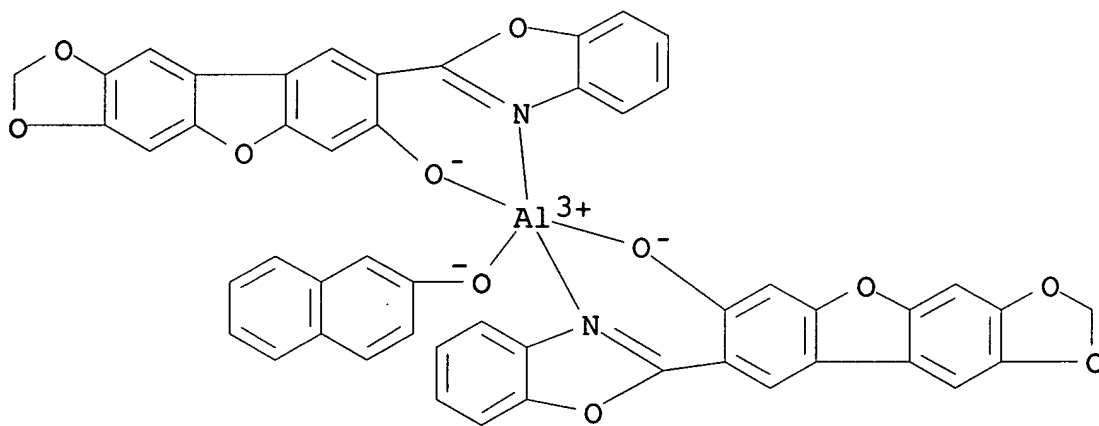
RN 528578-79-2 HCA

CN Aluminum, bis[2-(2-benzoxazolyl)-.kappa.N3)-3-dibenzofuranolato-.kappa.O3]phenoxy- (9CI) (CA INDEX NAME)



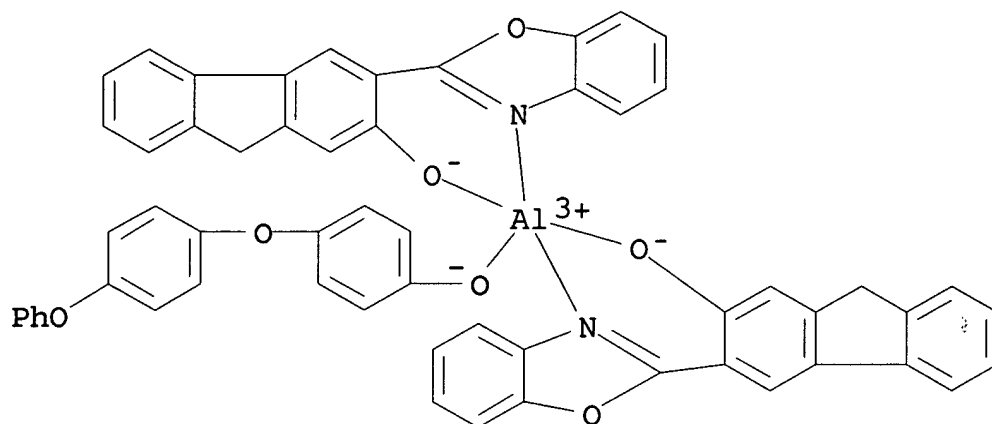
RN 528578-80-5 HCA

CN Aluminum, bis[8-(2-benzoxazolyl-.kappa.N3)benzofuro[2,3-f]-1,3-benzodioxol-7-olato-.kappa.O7] (2-naphthalenolato)- (9CI) (CA INDEX NAME)

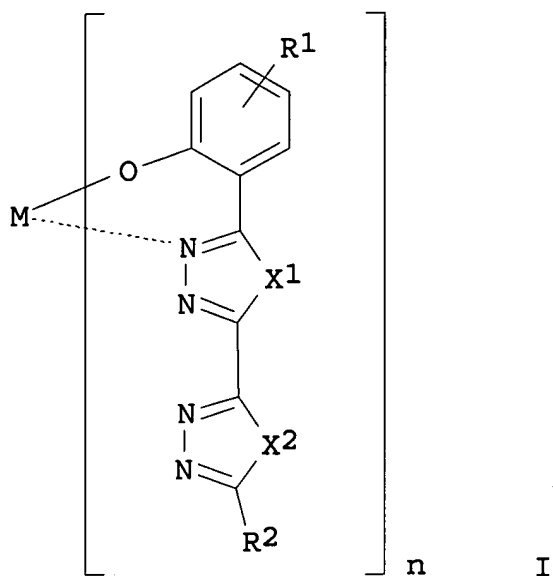


RN 528578-81-6 HCA

CN Aluminum, bis[3-(2-benzoxazolyl-.kappa.N3)-9H-fluoren-2-olato-.kappa.O] [4-(4-phenoxyphenoxy)phenolato-.kappa.O] - (9CI) (CA INDEX NAME)



IC ICM C09K011-06  
ICS H05B033-14  
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
ST **electroluminescent** device dibenzofuran fluorene fluorenone  
IT **Electroluminescent** devices  
Electron transport  
Thermal stability  
(**electroluminescent** device with dibenzofuran, fluorenone, or fluorene deriv.)  
IT 528578-74-7 528578-75-8 528578-76-9  
528578-77-0 528578-78-1 528578-79-2  
528578-80-5 528578-81-6 528578-82-7  
(**electroluminescent** device with dibenzofuran, fluorenone, or fluorene deriv.)  
L42 ANSWER 2 OF 23 HCA COPYRIGHT 2005 ACS on STN  
138:346227 Organic **electroluminescent** device. Yamada, Naoki; Tanabe, Hiroshi; Ueno, Kazunori (Canon Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2003123977 A2 20030425, 15 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-311600 20011009.  
GI



AB The invention relates to an org. **electroluminescent** device comprising the org. layer contg. the compd. represented by I [X1 and X2 = Group VIA element, such as O, S, Se, etc.; R1 and R2 = H, aryl, heterocyclic, etc.; M = metal element; n = integer .gtoreq.1].

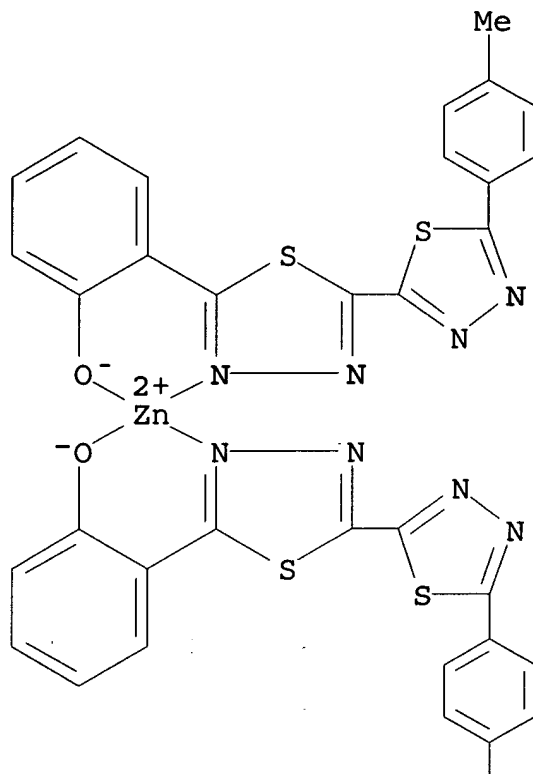
IT 515111-42-9 515111-43-0 515111-44-1

(org. **electroluminescent** device)

RN 515111-42-9 HCA

CN Zinc, bis[2-[5'-(4-methylphenyl) [2,2'-bi-1,3,4-thiadiazol]-5-yl-.kappa.N4]phenolato-.kappa.O]-, (T-4)- (9CI) (CA INDEX NAME)

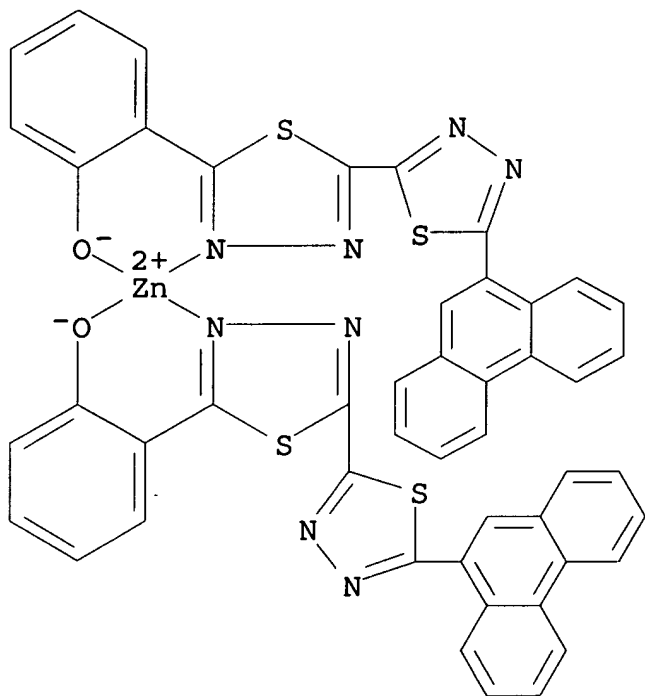
PAGE 1-A



PAGE 2-A

Me

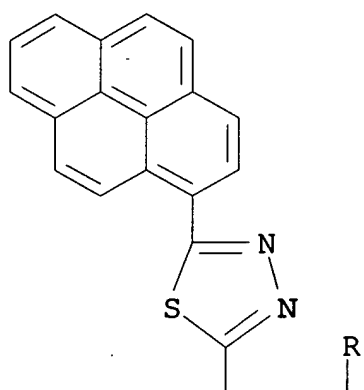
RN 515111-43-0 HCA  
 CN Zinc, bis[2-[5'-(9-phenanthrenyl)[2,2'-bi-1,3,4-thiadiazol]-5-yl-  
 .kappa.N4]phenolato-.kappa.O]-, (T-4)- (9CI) (CA INDEX NAME)



RN 515111-44-1 HCA

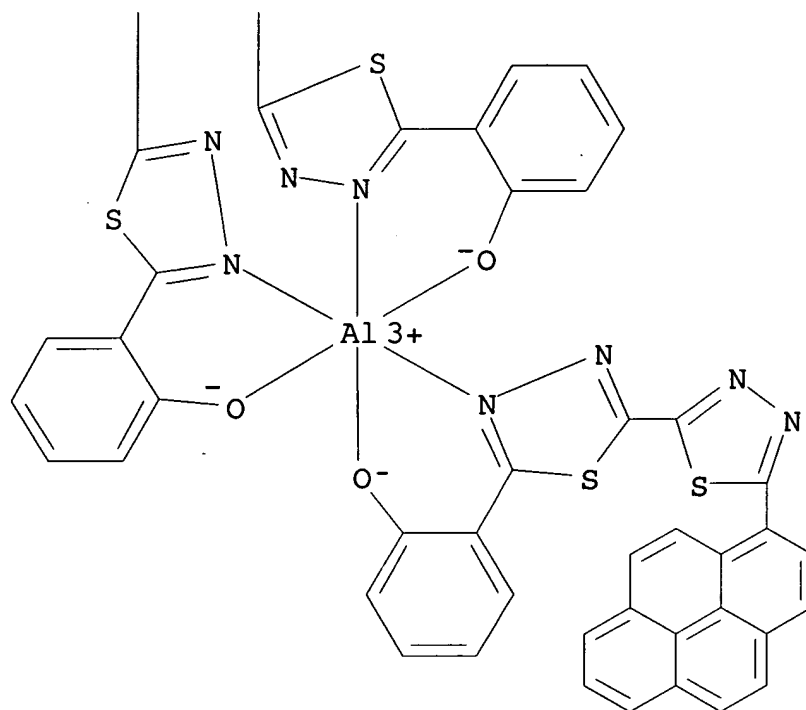
CN Aluminum, tris[2-[5'-(1-pyrenyl)[2,2'-bi-1,3,4-thiadiazol]-5-yl-  
.kappa.N4]phenolato-.kappa.O]- (9CI) (CA INDEX NAME)

PAGE 1-A

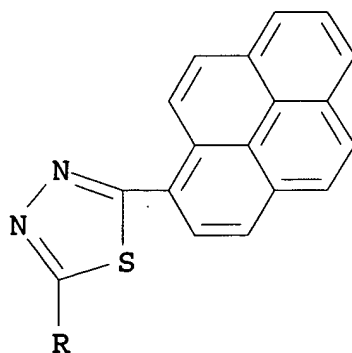




PAGE 2-A



PAGE 3-A



IC ICM H05B033-14  
ICS C09K011-06; H05B033-22  
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
ST org electroluminescent device bithiadiazole complex  
IT Electroluminescent devices

(org. electroluminescent device)

IT 515111-42-9 515111-43-0 515111-44-1

(org. electroluminescent device)

L42 ANSWER 3 OF 23 HCA COPYRIGHT 2005 ACS on STN

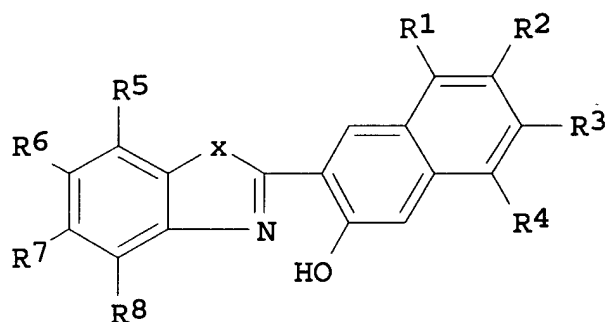
138:262448 **Electroluminescent** devices with high luminance.

Enomoto, Kazuhiro (Sharp Corp., Japan). Jpn. Kokai Tokkyo Koho JP

2003082341 A2 20030319, 17 pp. (Japanese). CODEN: JKXXAF.

APPLICATION: JP 2001-272328 20010907.

GI



AB In the devices having .gtoreq.1 org. layers between anodes and cathodes, the org. layers comprise metal complexes having I ligands (X = O, S, NH; R1-R8 = lower alkyl or alkoxy, halo, H; adjacent R1-R8 may form arom. ring). The metal complexes show high glass transition temp., good film-forming and **electron-transporting** properties, and high thermal stability.

IT 286383-62-8 502634-87-9 502634-89-1

502634-90-4 502634-91-5 502634-93-7

502634-95-9 502634-96-0 502634-97-1

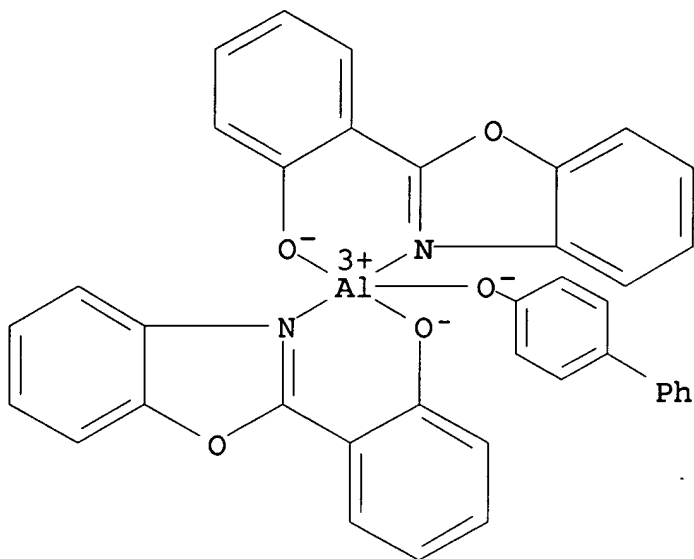
502634-98-2 502689-07-8

(light-emitting layers; high-luminance

**electroluminescent** devices contg. heat-resistant metal complexes)

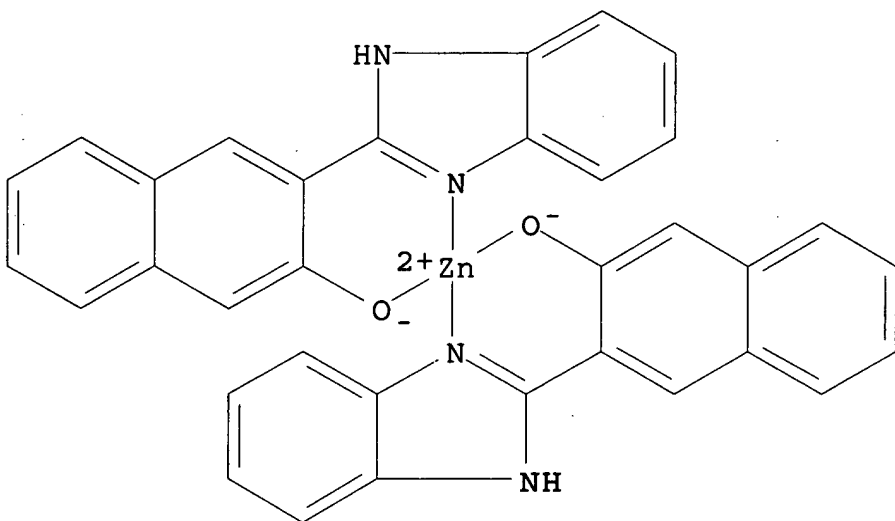
RN 286383-62-8 HCA

CN Aluminum, bis[2-(2-benzoxazolyl-.kappa.N3)phenolato-.kappa.O] [[1,1'-biphenyl]-4-olato]- (9CI) (CA INDEX NAME)



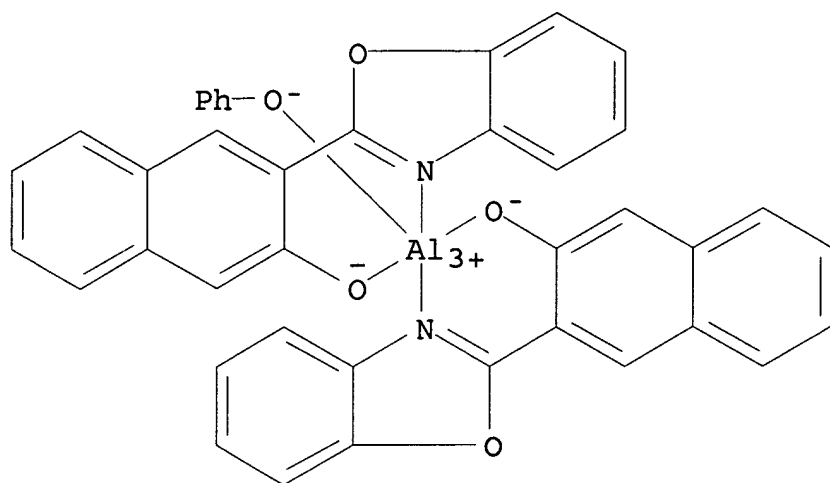
RN 502634-87-9 HCA

CN Zinc, bis[3-(1H-benzimidazol-2-yl-.kappa.N3)-2-naphthalenolato-.kappa.O]-, (T-4)- (9CI) (CA INDEX NAME)

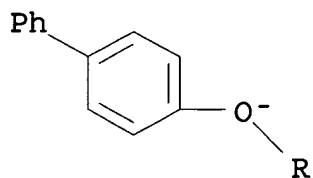
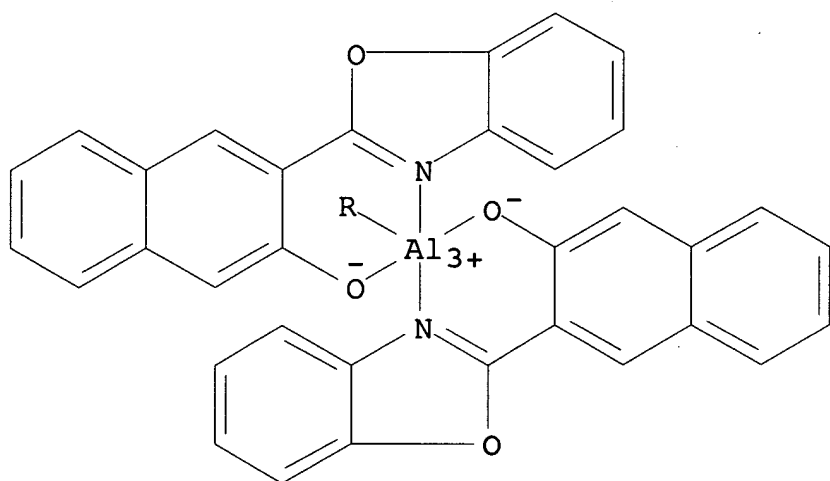


RN 502634-89-1 HCA

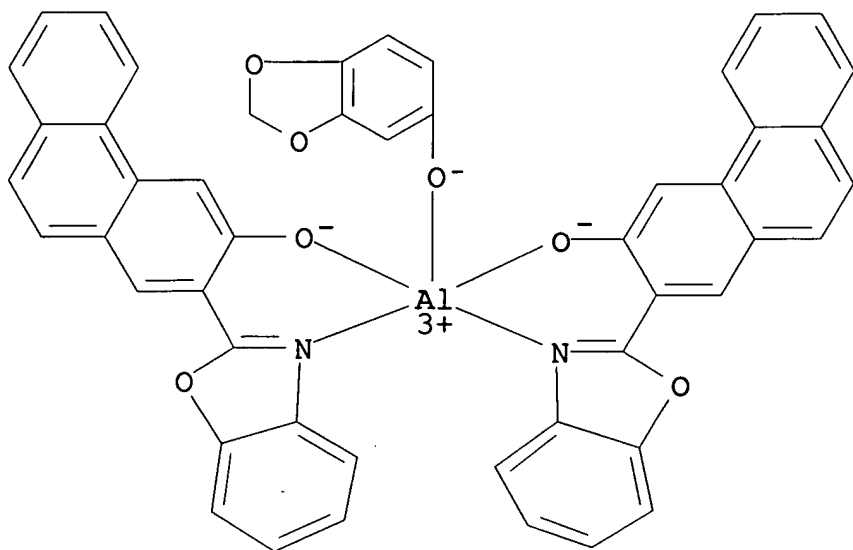
CN Aluminum, bis[3-(2-benzoxazolyl-.kappa.N3)-2-naphthalenolato-.kappa.O]phenoxy- (9CI) (CA INDEX NAME)



RN 502634-90-4 HCA  
 CN Aluminum, bis[3-(2-benzoxazolyl-.kappa.N3)-2-naphthalenolato-.kappa.O] [[1,1'-biphenyl]-4-olato] - (9CI) (CA INDEX NAME)

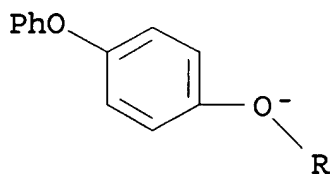
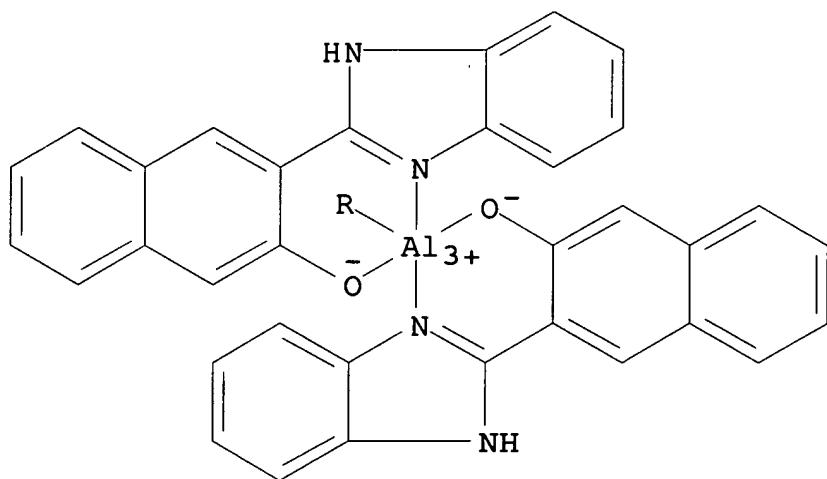


RN 502634-91-5 HCA  
 CN Aluminum, (1,3-benzodioxol-5-olato-.kappa.O5)bis[2-(2-benzoxazolyl-.kappa.N3)-3-phenanthrenolato-.kappa.O] - (9CI) (CA INDEX NAME)



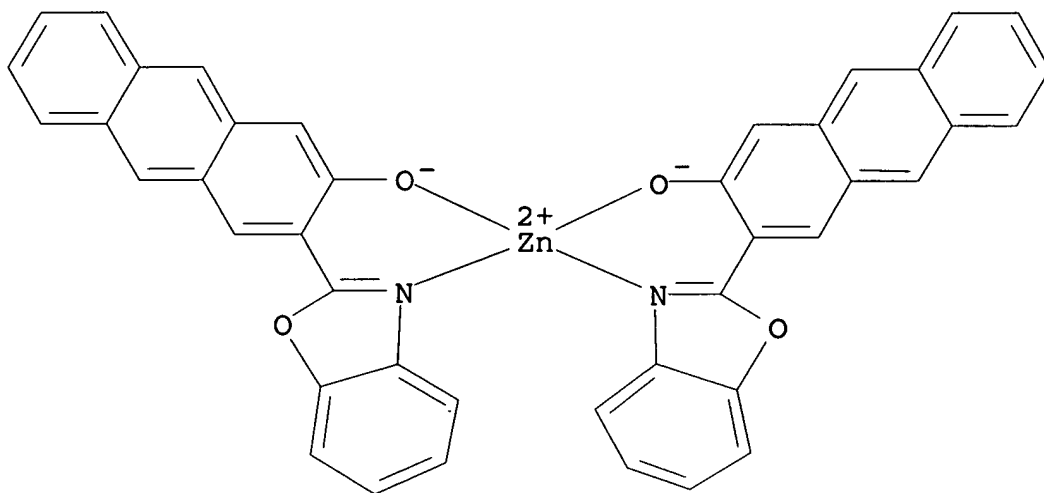
RN 502634-93-7 HCA

CN Aluminum, bis[3-(1H-benzimidazol-2-yl-.kappa.N3)-2-naphthalenolato-.kappa.O] (4-phenoxyphenolato-.kappa.O) - (9CI) (CA INDEX NAME)



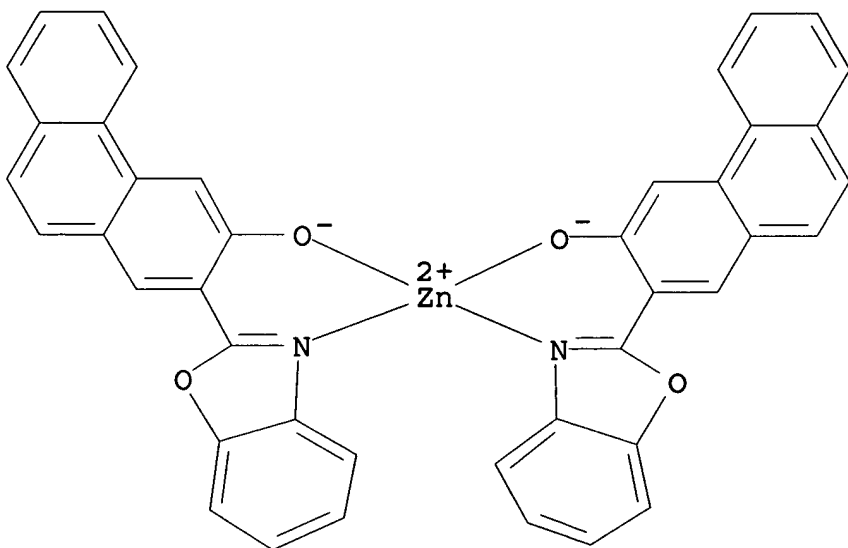
RN 502634-95-9 HCA

CN Zinc, bis[3-(2-benzoxazolyl-.kappa.N3)-2-anthracenolato-.kappa.O] -,  
(T-4) - (9CI) (CA INDEX NAME)



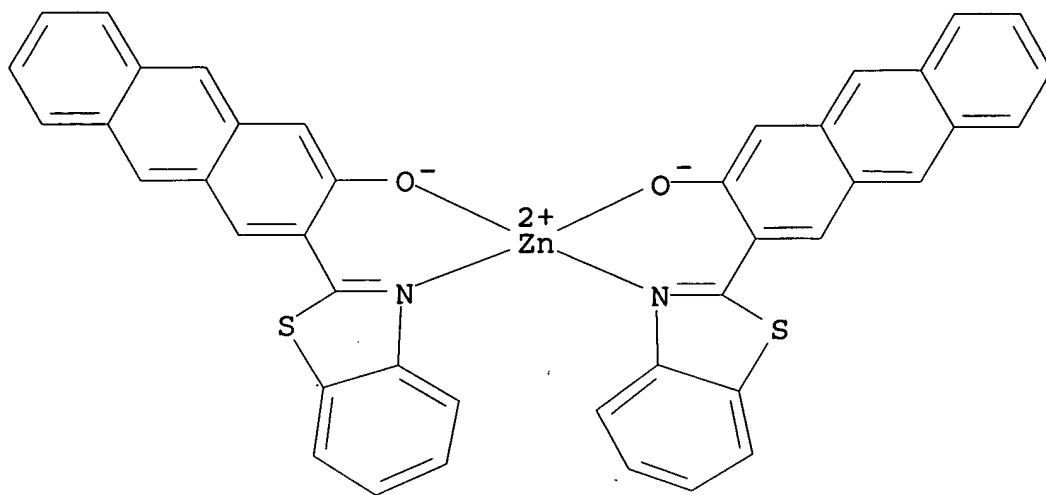
RN 502634-96-0 HCA

CN Zinc, bis[2-(2-benzoxazolyl-.kappa.N3)-3-phenanthrenolato-.kappa.O] -,  
, (T-4) - (9CI) (CA INDEX NAME)



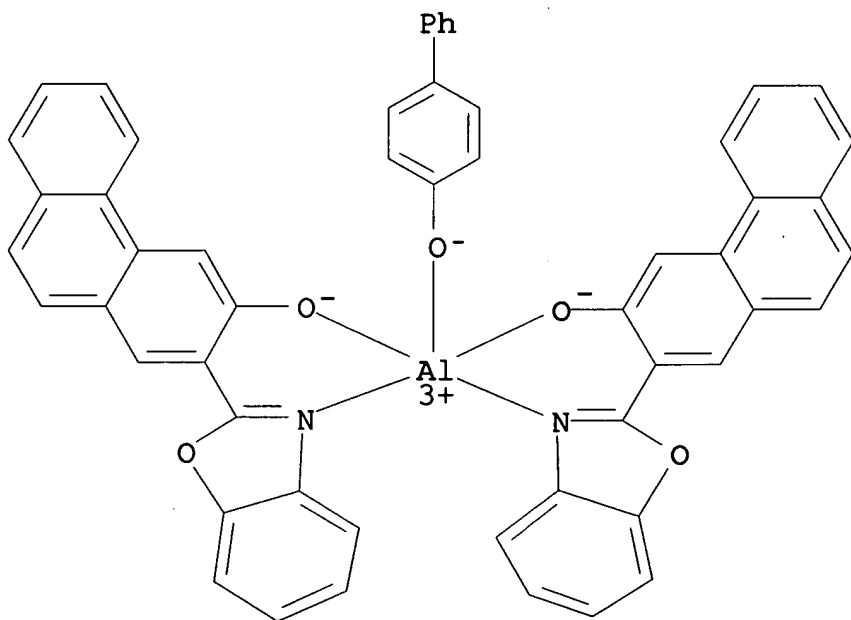
RN 502634-97-1 HCA

CN Zinc, bis[3-(2-benzothiazolyl-.kappa.N3)-2-anthracenolato-.kappa.O] -,  
, (T-4) - (9CI) (CA INDEX NAME)



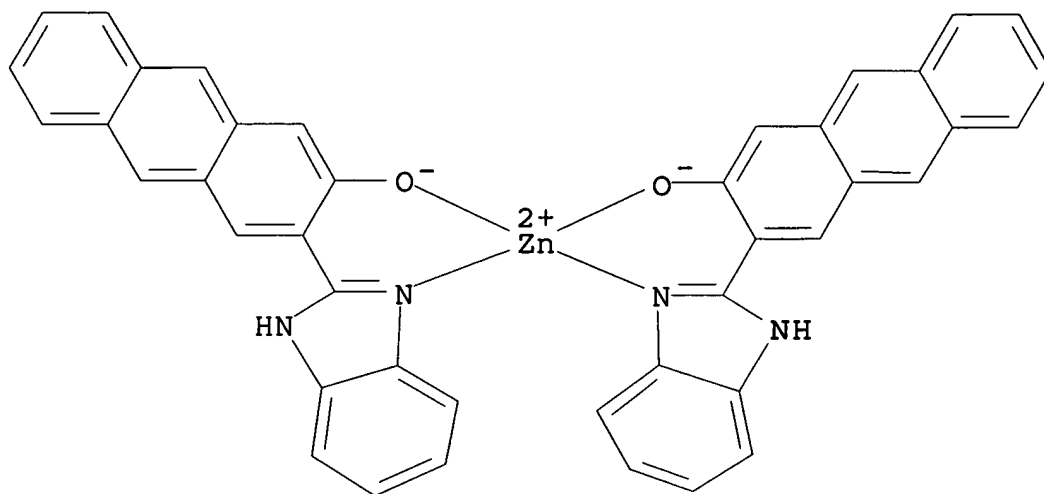
RN 502634-98-2 HCA

CN Aluminum, bis[2-(2-benzoxazolyl-.kappa.N3)-3-phenanthrenolato-.kappa.O] [[1,1'-biphenyl]-4-olato]- (9CI) (CA INDEX NAME)



RN 502689-07-8 HCA

CN Zinc, bis[3-(chloro-1H-benzimidazol-2-yl-.kappa.N3)-2-anthracenolato-.kappa.O]- (9CI) (CA INDEX NAME)



2 ( D1-C1 )

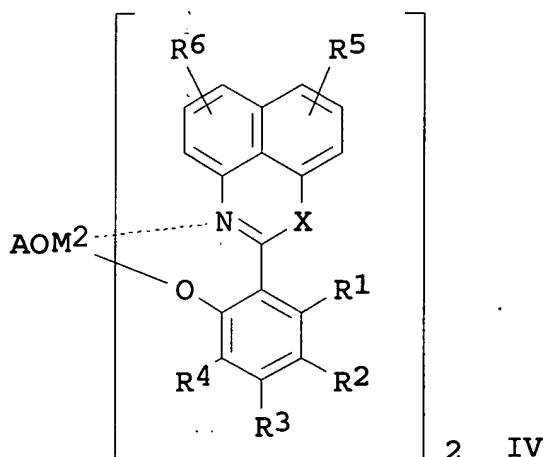
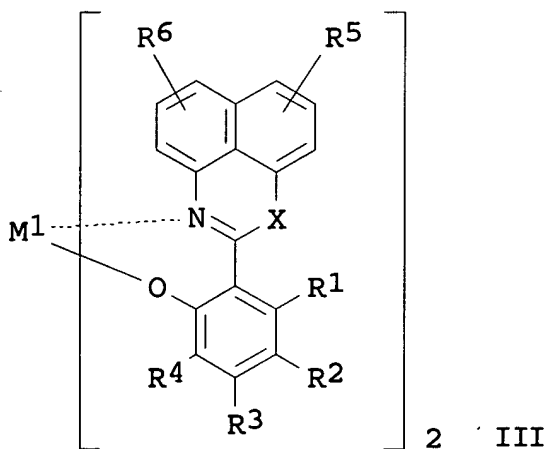
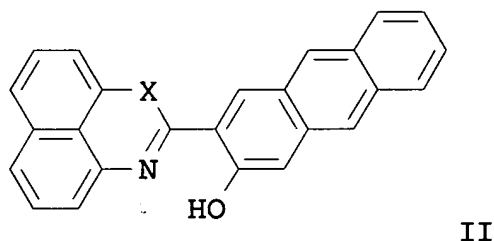
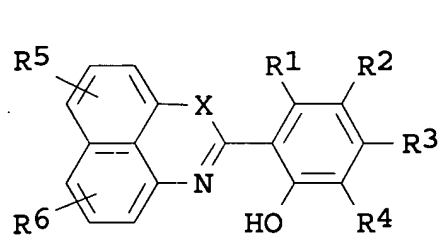
- IC ICM C09K011-06  
ICS H05B033-14; H05B033-22
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
- ST metal complex **electroluminescent** device luminance improvement; thermal stability metal complex **electroluminescent** device; benzoxazole complex **electroluminescent** device luminance improvement; benzimidazole complex **electroluminescent** device luminance improvement; benzothiazole complex **electroluminescent** device luminance improvement
- IT Ligands  
(complexes, **light-emitting** layers; high-luminance **electroluminescent** devices contg. heat-resistant metal complexes)
- IT **Electroluminescent** devices  
(high-luminance **electroluminescent** devices contg. heat-resistant metal complexes)
- IT 56235-91-7, .alpha.-Naphthol lithium salt  
(electron-barrier layers; high-luminance **electroluminescent** devices contg. heat-resistant metal complexes)
- IT 157759-29-0  
(hole-transporting layers; high-luminance **electroluminescent** devices contg. heat-resistant metal complexes)



IT 128904-10-9 286383-62-8 502634-83-5 502634-84-6  
 502634-85-7 502634-86-8 502634-87-9 502634-88-0  
 502634-89-1 502634-90-4 502634-91-5  
 502634-92-6 502634-93-7 502634-94-8 502634-95-9  
 502634-96-0 502634-97-1 502634-98-2  
 502689-07-8  
 (light-emitting layers; high-luminance  
 electroluminescent devices contg. heat-resistant metal  
 complexes)

L42 ANSWER 4 OF 23 HCA COPYRIGHT 2005 ACS on STN  
 138:262410 Electroluminescent devices. Enomoto, Kazuhiro;  
 Nishimura, Kazuhito (Sharp Corp., Japan). Jpn. Kokai Tokkyo Koho JP  
 2003086378 A2 20030320, 12 pp. (Japanese). CODEN: JKXXAF.  
 APPLICATION: JP 2001-275270 20010911.

GI.



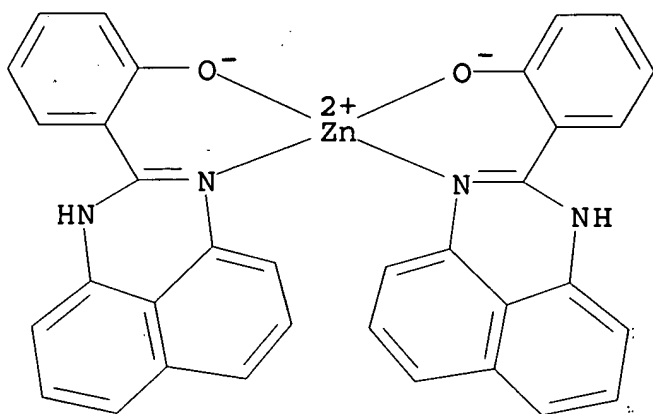
AB The devices comprise: (1) a metal complex having a legend I or II (X = O, S, NH; R1-6 = alkyl, alkoxy, Ph, halo, H; R1,2, R2,3 and R3,4 may form an arom. ring); and (2) and (3), III and IV, resp. (M1,2 = divalent and trivalent metal, resp.; A = (substituted) C6-18 arom.

group), where, typically, M1 = Zn, Mg, Be, Ni, Hg; M2 = Al, In, Ru, Os; and the devices comprise a glass substrate, an ITO electrode, a hole transport layer, an org. phosphor layer, an **electron transport** layer and a MgAg electrode.

IT 502422-16-4 502422-18-6 502422-20-0  
502422-21-1 502422-22-2 502422-24-4  
(electroluminescent devices contg. metal complex)

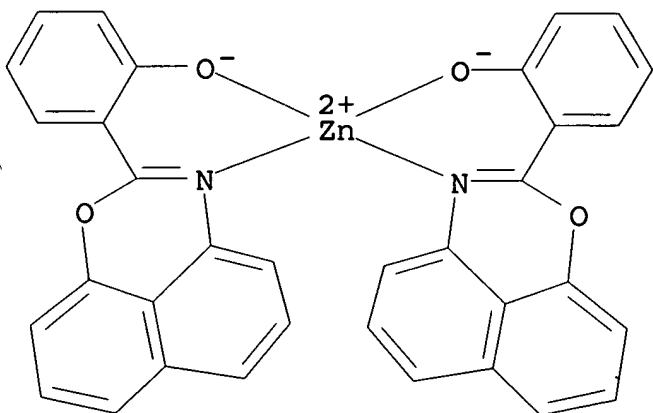
RN 502422-16-4 HCA

CN Zinc, bis[2-(1H-perimidin-2-yl-.kappa.N3)phenolato-.kappa.O]-, (T-4) - (9CI) (CA INDEX NAME)



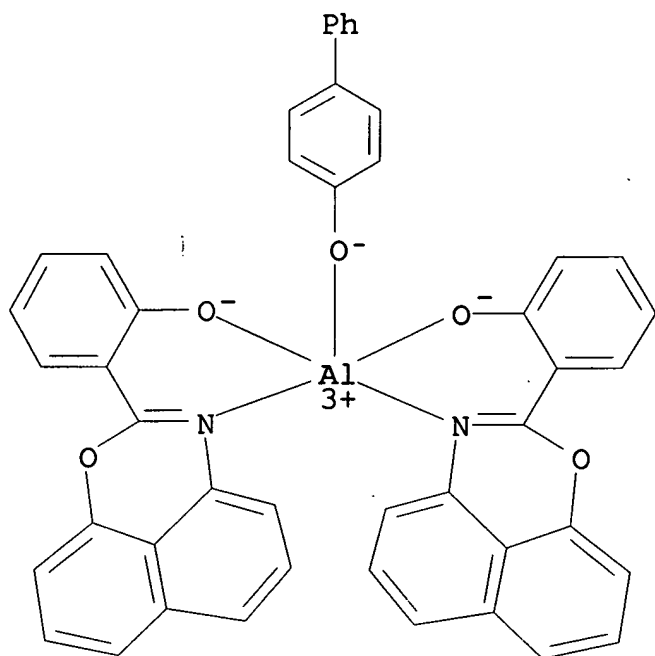
RN 502422-18-6 HCA

CN Zinc, bis[2-(naphth[1,8-de]-1,3-oxazin-2-yl-.kappa.N3)phenolato-.kappa.O]-, (T-4) - (9CI) (CA INDEX NAME)

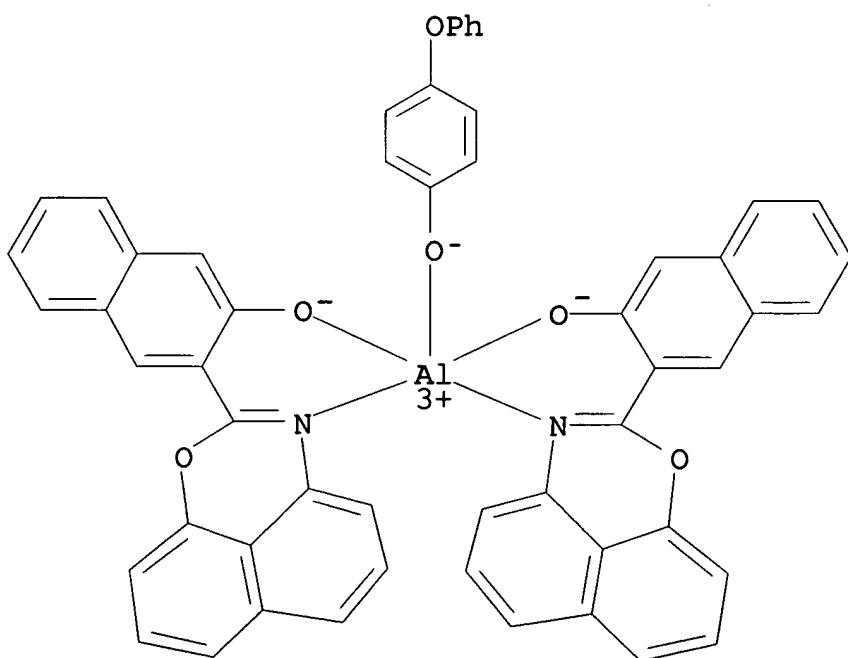


RN 502422-20-0 HCA

CN Aluminum, ([1,1'-biphenyl]-4-olato)bis[2-(naphth[1,8-de]-1,3-oxazin-2-yl-.kappa.N3)phenolato-.kappa.O]- (9CI) (CA INDEX NAME)

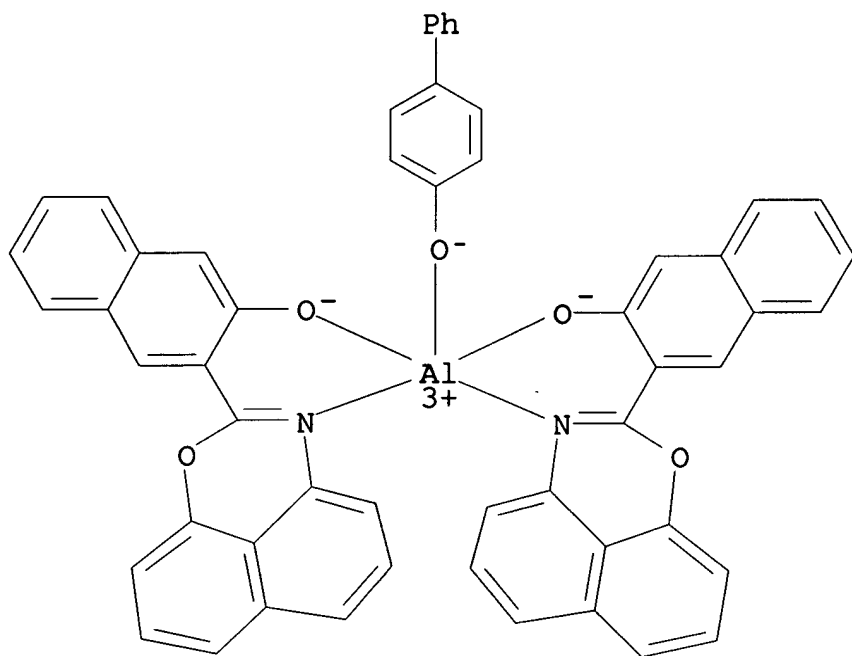


RN 502422-21-1 HCA  
CN Aluminum, bis[3-(naphth[1,8-de]-1,3-oxazin-2-yl-.kappa.N3)-2-naphthalenolato-.kappa.O] (4-phenoxyphenolato-.kappa.O) - (9CI) (CA INDEX NAME)



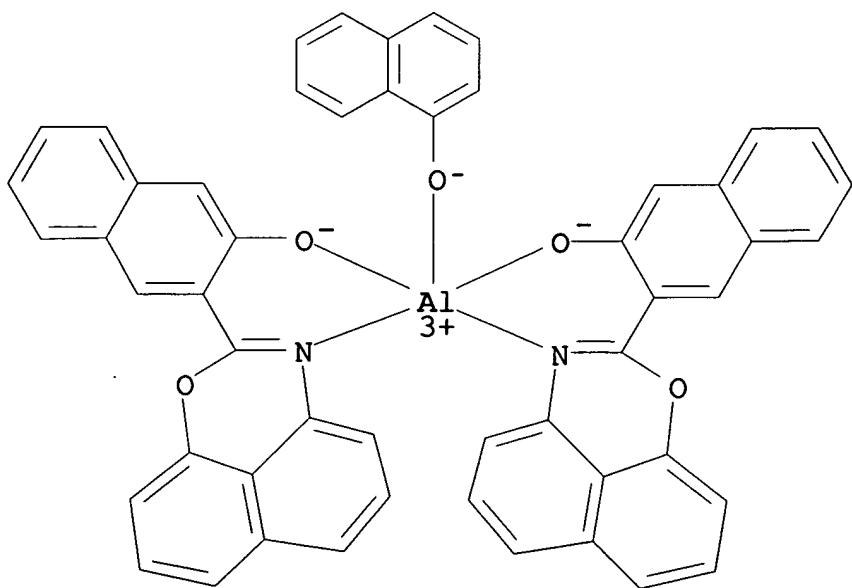
RN 502422-22-2 HCA

CN Aluminum, ([1,1'-biphenyl]-4-olato)bis[3-(naphth[1,8-de]-1,3-oxazin-2-yl-.kappa.N3)-2-naphthalenolato-.kappa.O] - (9CI) (CA INDEX NAME)



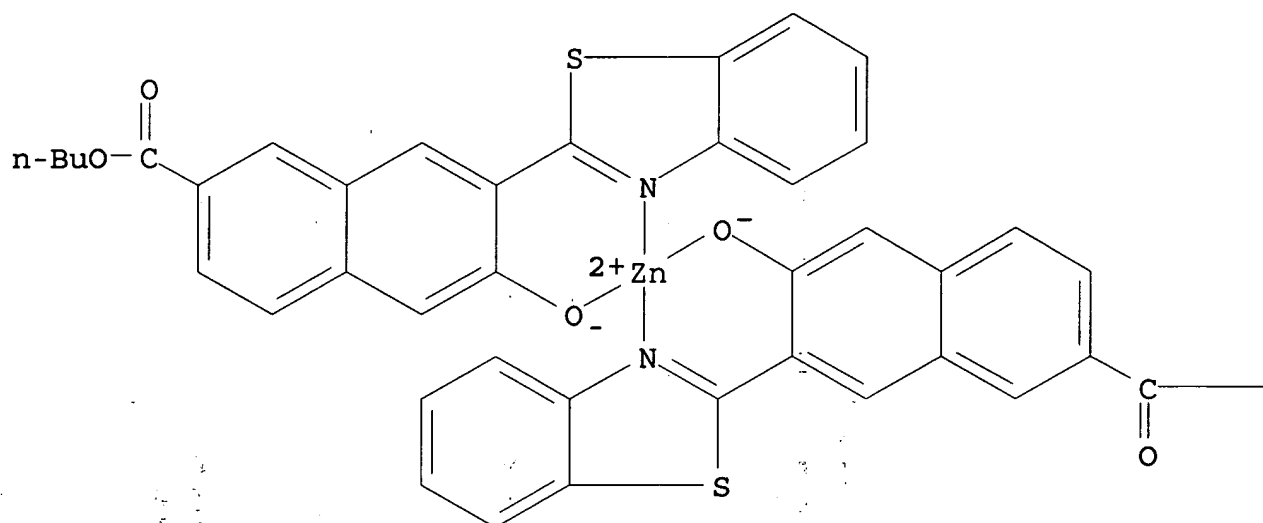
RN 502422-24-4 HCA

CN Aluminum, (1-naphthalenolato)bis[3-(naphth[1,8-de]-1,3-oxazin-2-yl-.kappa.N3)-2-naphthalenolato-.kappa.O] - (9CI) (CA INDEX NAME)



IC ICM H05B033-14  
ICS C09K011-06; H05B033-22  
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
ST metal complex **electroluminescent** device  
IT **Electroluminescent** devices  
Glass substrates  
(**electroluminescent** devices contg. metal complex)  
IT Coordination compounds  
(**electroluminescent** devices contg. metal complex)  
IT 37271-44-6 50926-11-9, ITO 502185-67-3 **502422-16-4**  
502422-17-5 **502422-18-6** 502422-19-7 **502422-20-0**  
**502422-21-1** **502422-22-2** 502422-23-3  
**502422-24-4**  
(**electroluminescent** devices contg. metal complex)  
  
L42 ANSWER 5 OF 23 HCA COPYRIGHT 2005 ACS on STN  
136:14779 Preparation of naphthol derivatives and metal complexes.  
Ueno, Ryuzo; Kitayama, Masaya; Minami, Kenji; Wakamori, Hiroyuki  
(Kabushiki Kaisha Ueno Seiyaku Oyo Kenkyujo, Japan). PCT Int. Appl.  
WO 2001087859 A1 **20011122**, 53 pp. DESIGNATED STATES: W:  
CN, JP, KR, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,  
IT, LU, MC, NL, PT, SE, TR. (Japanese). CODEN: PIXXD2.  
APPLICATION: WO 2001-JP4006 20010515. PRIORITY: JP 2000-143219  
20000516.  
  
GI  
  
\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*  
  
AB Title compds. [I; Y1, Y2 independently = Q, ACO ; A = OH, C6H5NH,  
O(CH2)3CH3, O(CH2)15CH3, NH(CH2)11CH3, 2-NHC6H4CH3, OCH3; X1 = O, S,  
NH; Z = optionally substituted arom. group or a heterocyclic group  
bearing a conjugated double bond; R = H, Na, alkyl, CH3CO; R1 = H,  
NO2], salts, various azo (mono, bis, and tris) compds., and metal  
complexes thereof, are prepd. as dye, org. photoreceptor, or  
**electroluminescence** material. The title compd. II was  
prepd. from 4,4',4''-triaminotriphenylamine and I (Y1 = Y2 = Q; X1 =  
S; Z = benzo; R = H; R1 = H). The title metal complex III was  
prepd. from title compd. I (Y1 = Y2; X1 = S; Z = benzo; R = H; R1 =  
H) and Cu(OAc)2.cntdot.H2O.  
IT **374776-65-5P** **374776-69-9P**  
(prepn. of naphthol derivs. and metal complexes)  
RN **374776-65-5** HCA  
CN Zinc, bis[butyl 7-(2-benzothiazolyl-.kappa.N3)-6-(hydroxy-.kappa.O)-  
2-naphthalenecarboxylato]-, (T-4)- (9CI) (CA INDEX NAME)

PAGE 1-A

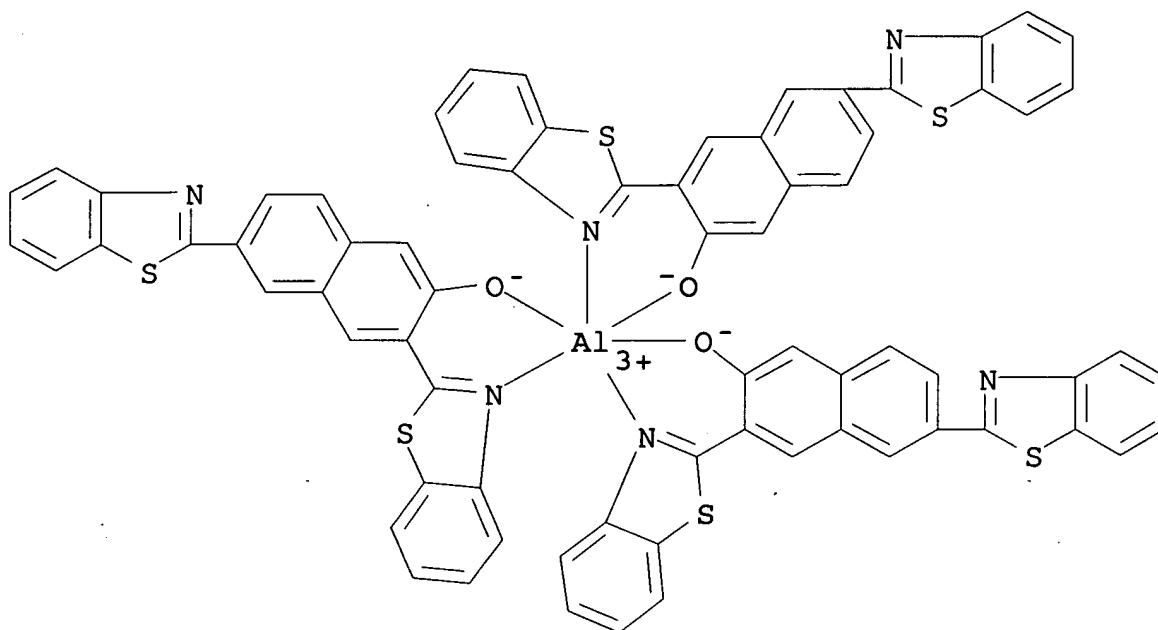


PAGE 1-B

— OBU-n

RN 374776-69-9 HCA

CN Aluminum, tris[3-(2-benzothiazolyl-.kappa.N3)-6-(2-benzothiazolyl)-2-naphthalenolato-.kappa.O] - (9CI) (CA INDEX NAME)



IC ICM C07D263-56  
 ICS C07D263-60; C07D263-62; C07D277-66; C07D235-18; C07D417-10;  
 C07D413-10; C07D413-14; C07D519-00; C07D498-04  
 CC 78-7 (Inorganic Chemicals and Reactions)  
 Section cross-reference(s): 28, 41, 45, 73, 74  
 ST heterocyclylnaphthol prepn dye; arylazo heterocyclylnaphthol prepn  
 org photoreceptor dye; metal heterocyclylnaphthol complex prepn  
**electroluminescence** material  
 IT Dyes

**Electroluminescent devices**

(prepn. of naphthol derivs. and metal complexes)

IT	374728-87-7P	374728-88-8P	374728-92-4P	374728-93-5P
	374728-94-6P	374728-95-7P	374728-96-8P	374728-97-9P
	374728-98-0P	374728-99-1P	374729-01-8P	374729-02-9P
	374729-03-0P	374729-04-1P	374729-05-2P	374729-06-3P
	374729-07-4P	374729-08-5P	374729-09-6P	374729-10-9P
	374729-11-0P	374729-12-1P	374729-13-2P	374729-14-3P
	374729-16-5P	374729-17-6P	374729-18-7P	374729-21-2P
	374729-22-3P	374729-23-4P	374729-25-6P	374729-26-7P
	374729-27-8P	374729-28-9P	374729-29-0P	374729-30-3P
	374729-31-4P	374729-32-5P	374729-33-6P	374729-34-7P
	374729-35-8P	374729-36-9P	374729-37-0P	374729-38-1P
	374729-39-2P	374776-61-1P	374776-63-3P	374776-64-4P
	<b>374776-65-5P</b>	374776-66-6P	374776-68-8P	
	<b>374776-69-9P</b>	374776-70-2P		

(prepn. of naphthol derivs. and metal complexes)

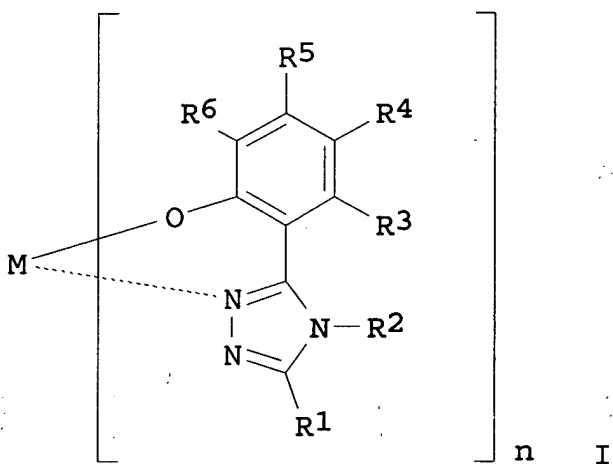
L42 ANSWER 6 OF 23 HCA COPYRIGHT 2005 ACS on STN

135:280226 Organic **electroluminescent** material and device.

Tamano, Michiko (Toyo Ink Mfg. Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001271063 A2 **20011002**, 16 pp. (Japanese).

CODEN: JKXXAF. APPLICATION: JP 2000-85502 20000327.

GI



AB The invention refers to an **electroluminescent** material I  
[R1,2 = H, (un)substituted alkyl, aryl, or arom.; R3-6 = H, halo, cyano, (un)substituted alkoxy aryl, aryloxy, arom. or oxy arom., where adjacent groups may join to form a ring; M = 2 - 4 valent metal; n = 1 - 4].

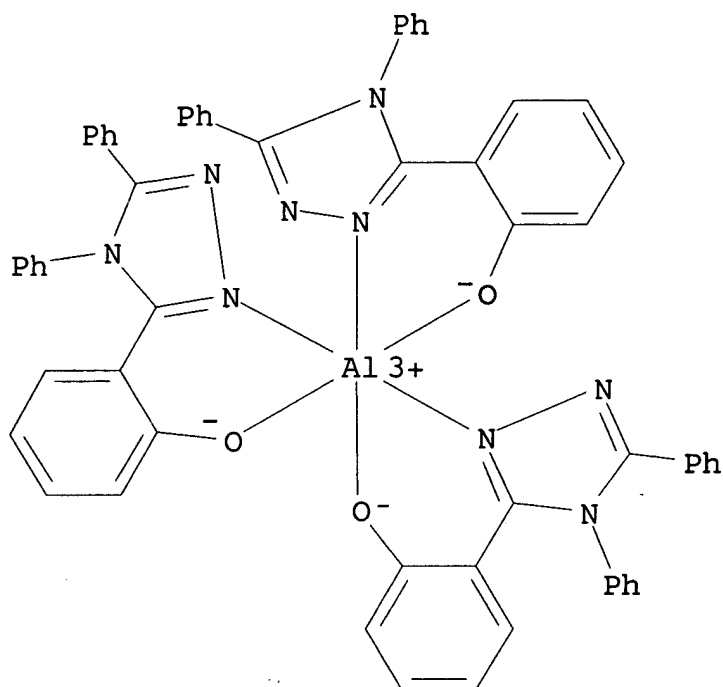
IT 226704-63-8 227314-77-4 363624-80-0  
363624-86-6 363624-87-7 363624-89-9  
363624-90-2 363624-91-3 363624-93-5  
363624-94-6 363624-95-7 363624-96-8  
363624-97-9

(org. **electroluminescent** material and device)

RN 226704-63-8 HCA

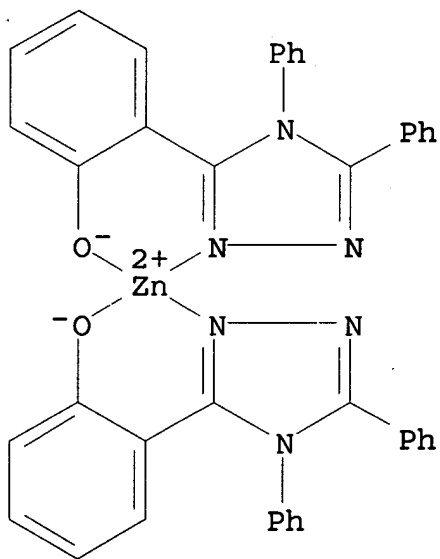
CN Aluminum, tris[2-(4,5-diphenyl-4H-1,2,4-triazol-3-yl-.kappa.N2)phenolato-.kappa.O]- (9CI) (CA INDEX NAME)





RN 227314-77-4 HCA

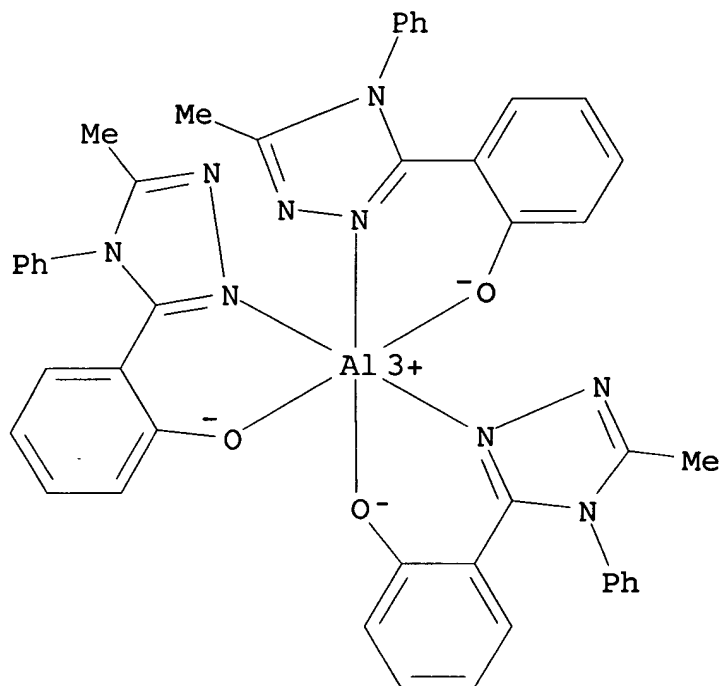
CN Zinc, bis[2-(4,5-diphenyl-4H-1,2,4-triazol-3-yl-.kappa.N2)phenolato-.kappa.O]-, (T-4)- (9CI) (CA INDEX NAME)



RN 363624-80-0 HCA

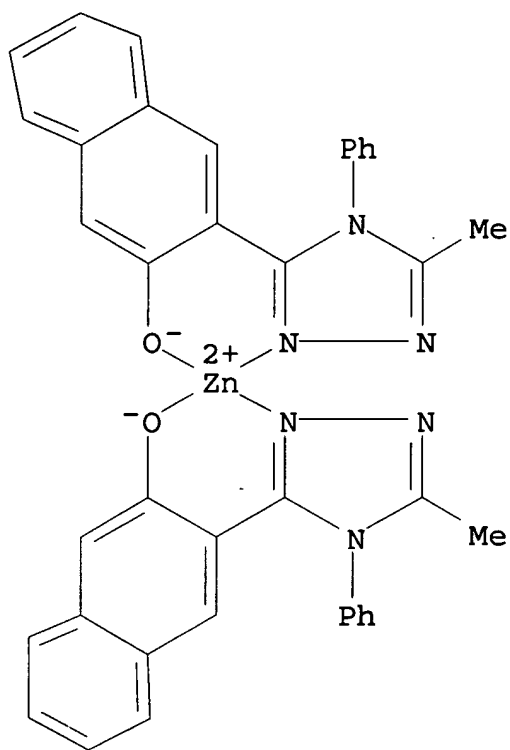
CN Aluminum, tris[2-(5-methyl-4-phenyl-4H-1,2,4-triazol-3-yl-

.kappa.N2)phenolato-.kappa.O] - (9CI) (CA INDEX NAME)

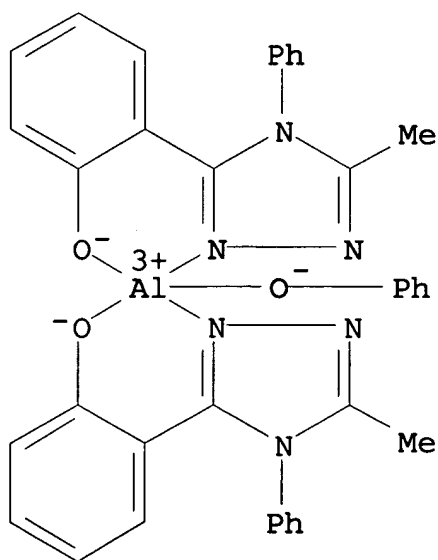


RN 363624-86-6 HCA

CN Zinc, bis[3-(5-methyl-4-phenyl-4H-1,2,4-triazol-3-yl-.kappa.N2)-2-naphthalenolato-.kappa.O]-, (T-4) - (9CI) (CA INDEX NAME)

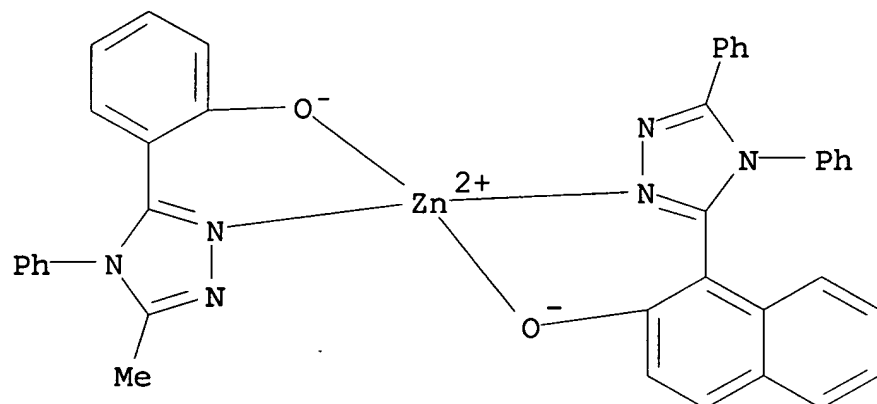


RN 363624-87-7 HCA

CN Aluminum, bis[2-(5-methyl-4-phenyl-4H-1,2,4-triazol-3-yl-  
.kappa.N2)phenolato-.kappa.O]phenoxy- (9CI) (CA INDEX NAME)

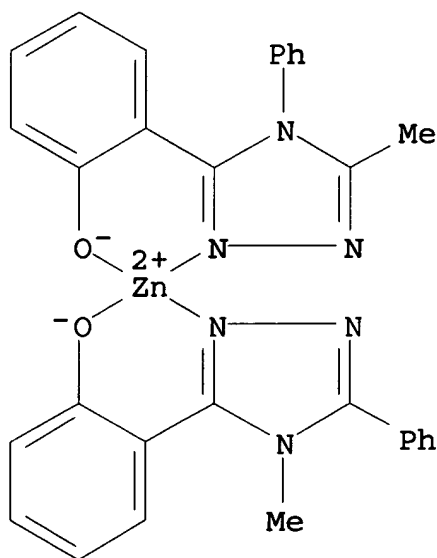
RN 363624-89-9 HCA

CN Zinc, [1-(4,5-diphenyl-4H-1,2,4-triazol-3-yl-.kappa.N2)-2-naphthalenolato-.kappa.O] [2-(5-methyl-4-phenyl-4H-1,2,4-triazol-3-yl-.kappa.N2)phenolato-.kappa.O]-, (T-4) - (9CI) (CA INDEX NAME)



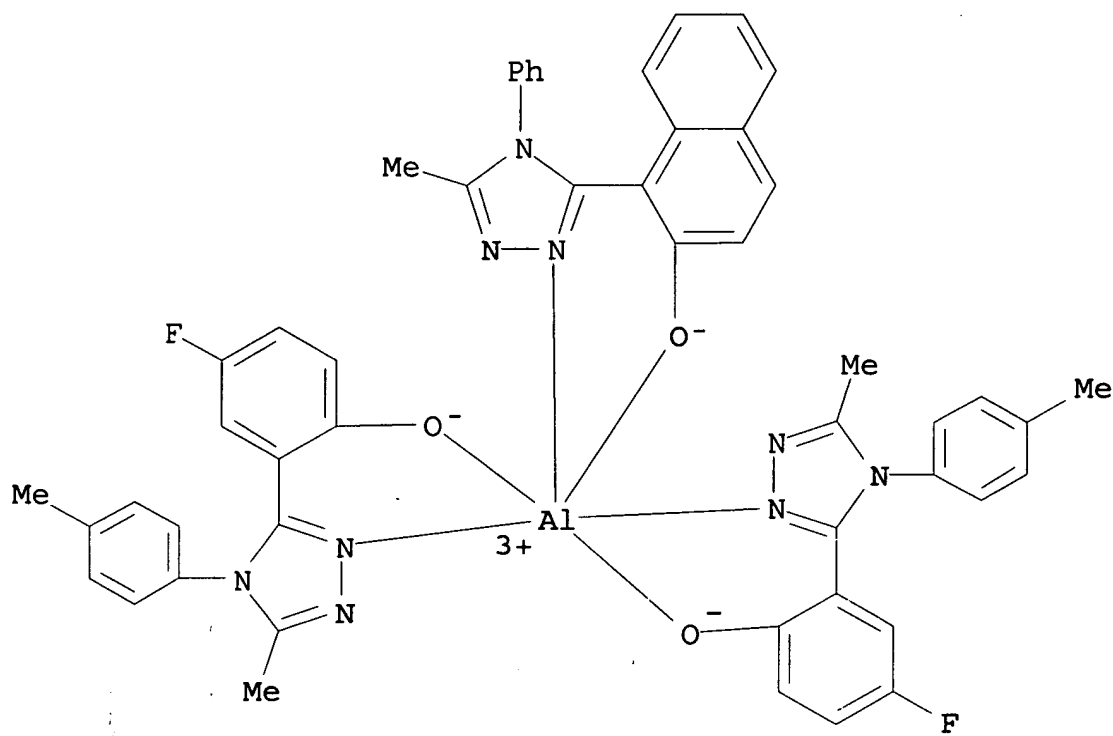
RN 363624-90-2 HCA

CN Zinc, [2-(4-methyl-5-phenyl-4H-1,2,4-triazol-3-yl-.kappa.N2)phenolato-.kappa.O] [2-(5-methyl-4-phenyl-4H-1,2,4-triazol-3-yl-.kappa.N2)phenolato-.kappa.O]-, (T-4) - (9CI) (CA INDEX NAME)



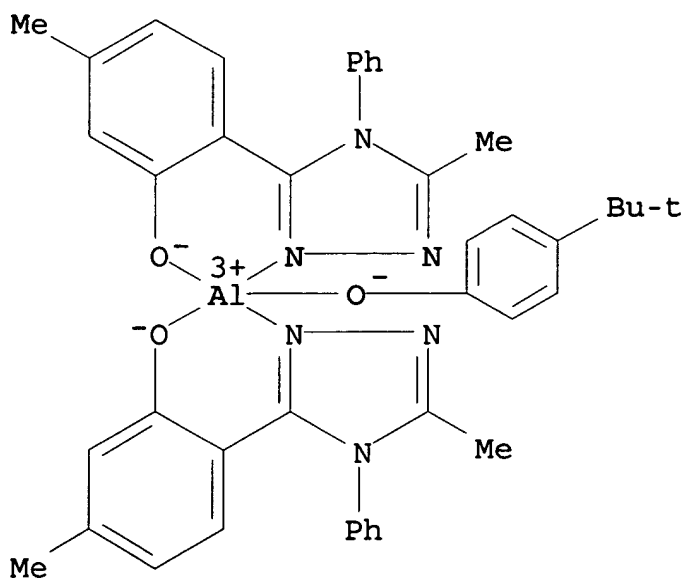
RN 363624-91-3 HCA

CN Aluminum, bis[4-fluoro-2-[5-methyl-4-(4-methylphenyl)-4H-1,2,4-triazol-3-yl-.kappa.N2]phenolato-.kappa.O] [1-(5-methyl-4-phenyl-4H-1,2,4-triazol-3-yl-.kappa.N2)-2-naphthalenolato-.kappa.O] - (9CI) (CA INDEX NAME)



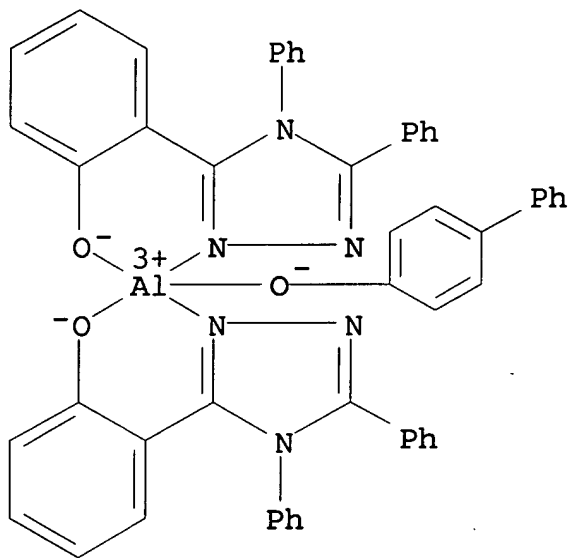
RN 363624-93-5 HCA

CN Aluminum, [4-(1,1-dimethylethyl)phenolato]bis[5-methyl-2-(5-methyl-4-phenyl-4H-1,2,4-triazol-3-yl-.kappa.N2)phenolato-.kappa.O] - (9CI)  
(CA INDEX NAME)



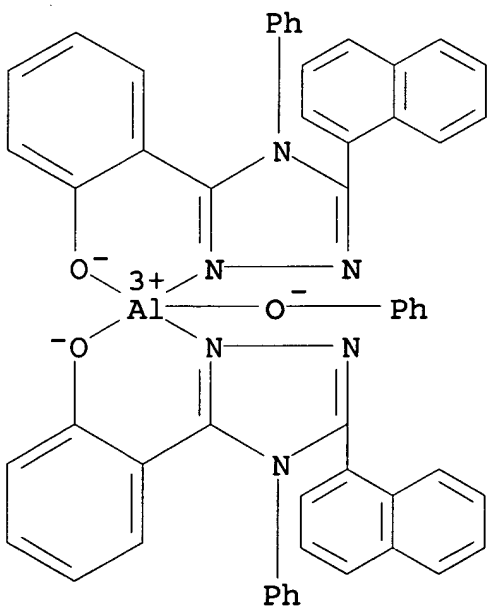
RN 363624-94-6 HCA

CN Aluminum, [[1,1'-biphenyl]-4-olato]bis[2-(4,5-diphenyl-4H-1,2,4-triazol-3-yl-.kappa.N2)phenolato-.kappa.O] - (9CI) (CA INDEX NAME)



RN 363624-95-7 HCA

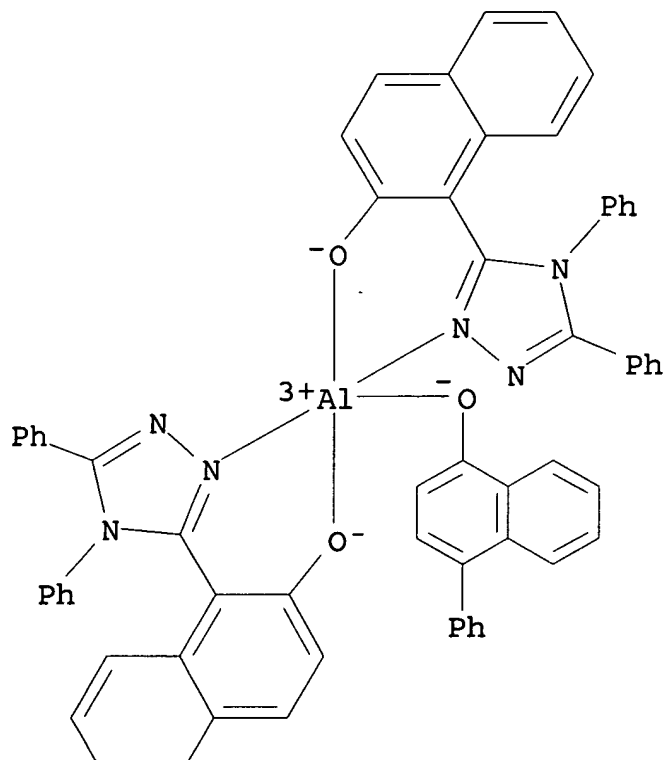
CN Aluminum, bis[2-[5-(1-naphthalenyl)-4-phenyl-4H-1,2,4-triazol-3-yl-.kappa.N2]phenolato-.kappa.O]phenoxy- (9CI) (CA INDEX NAME)



RN 363624-96-8 HCA

CN Aluminum, bis[1-(4,5-diphenyl-4H-1,2,4-triazol-3-yl-.kappa.N2)-2-naphthalenolato-.kappa.O] (4-phenyl-1-naphthalenolato)- (9CI) (CA INDEX NAME)

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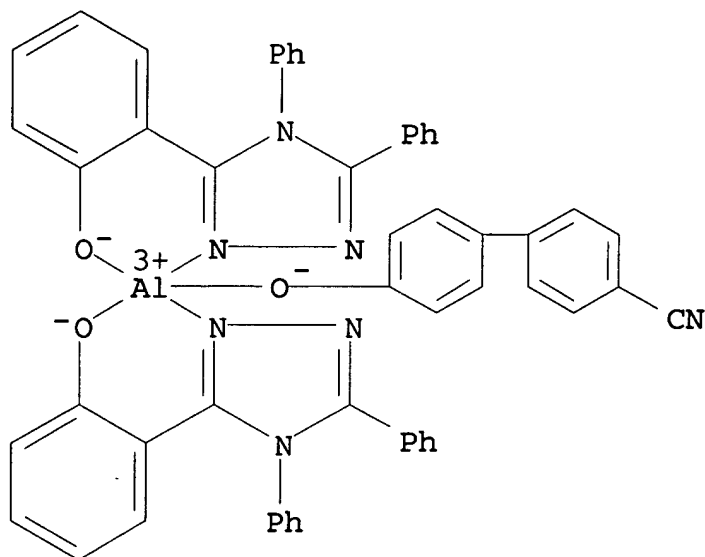


PAGE 2-A



RN 363624-97-9 HCA

CN Aluminum, bis[2-(4,5-diphenyl-4H-1,2,4-triazol-3-yl-.kappa.N2)phenolato-.kappa.O] [4'-(hydroxy-.kappa.O) [1,1'-biphenyl]-4-carbonitrilato]- (9CI) (CA INDEX NAME)



- IC ICM C09K011-06  
ICS H05B033-14
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
- ST **electroluminescent** device
- IT **Electroluminescent** devices  
(org. **electroluminescent** material and device)
- IT 147-14-8, Copper phthalocyanine 517-51-1, Rubrene 1047-16-1, Quinacridone 2085-33-8, Aluminum tris(8-hydroxyquinolinato) 12798-95-7 37271-44-6 50926-11-9, ITO 65181-78-4, TPD 123847-85-8, .alpha.-NPD 124729-98-2 188049-36-7  
226704-63-8 227314-77-4 363624-80-0  
363624-81-1 363624-82-2 363624-83-3 363624-85-5  
363624-86-6 363624-87-7 363624-88-8  
363624-89-9 363624-90-2 363624-91-3  
363624-93-5 363624-94-6 363624-95-7  
363624-96-8 363624-97-9  
(org. **electroluminescent** material and device)
- L42 ANSWER 7 OF 23 HCA COPYRIGHT 2005 ACS on STN
- 134:107714 Organic **electroluminescent** element. Ueda, Noriko; Suzuri, Yoshiyuki; Yamada, Taketoshi; Kita, Hiroshi (Konica Corporation, Japan). Eur. Pat. Appl. EP 1067165 A2 20010110, 93 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 2000-114436 20000705. PRIORITY: JP 1999-190287 19990705.
- AB Org. **electroluminescent** elements comprising a



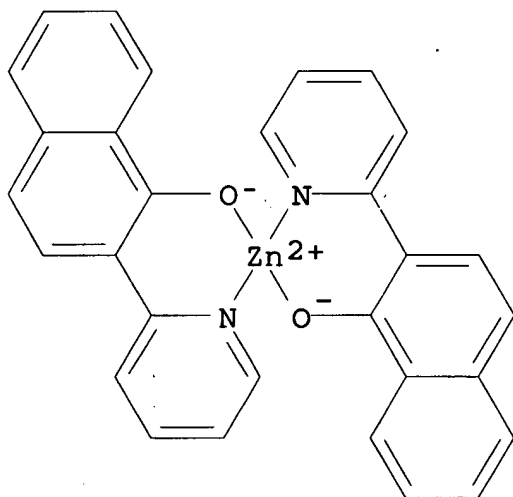
light emitting layer comprised of .gtoreq.1 thin layers of an org. compd. put between an anode and a cathode are described in which .gtoreq.1 org. compd. thin layer contains an organometallic complex having both an ionic coordinate bond formed by a nitrogen anion (e.g., included in an arom. heterocyclic ring) and a metal cation and a coordinate bond formed between a nitrogen atom or a chalcogen and a metal. The metal cation of the org. metal complex may be selected from Al, Ga, In, TI, Be, Mg, Sr, Ba, Ca, Zn, Cd, Hg, Pd, or Cu.

IT 193622-12-7 318989-58-1 318989-59-2

(org. electroluminescent elements using organometallic compd. emitting materials)

RN 193622-12-7 HCA

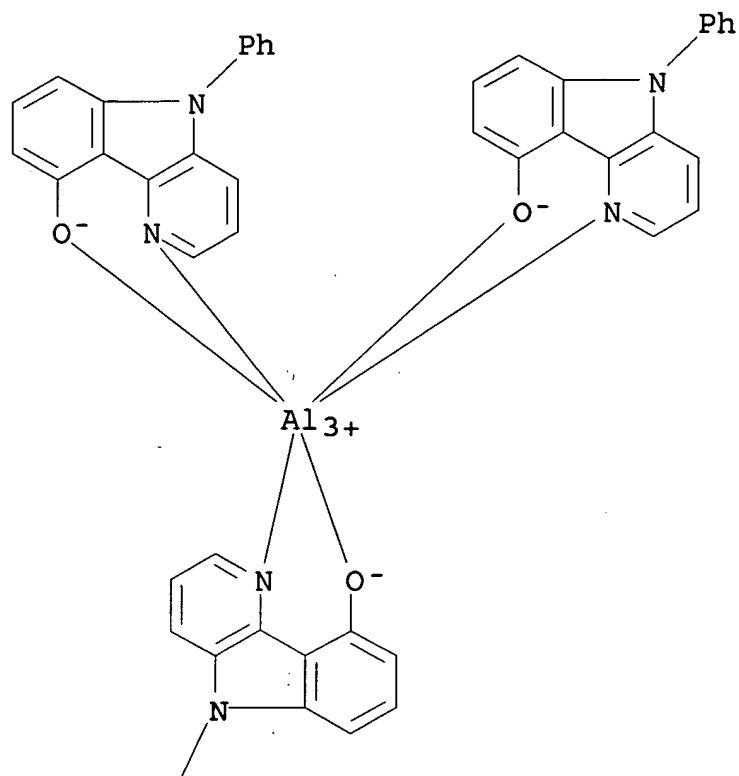
CN Zinc, bis[2-(2-pyridinyl-.kappa.N)-1-naphthalenolato-.kappa.O]-, (T-4)- (9CI) (CA INDEX NAME)



RN 318989-58-1 HCA

CN Aluminum, tris(5-phenyl-5H-pyrido[3,2-b]indol-9-olato-.kappa.N1,.kappa.O9)- (9CI) (CA INDEX NAME)

PAGE 1-A

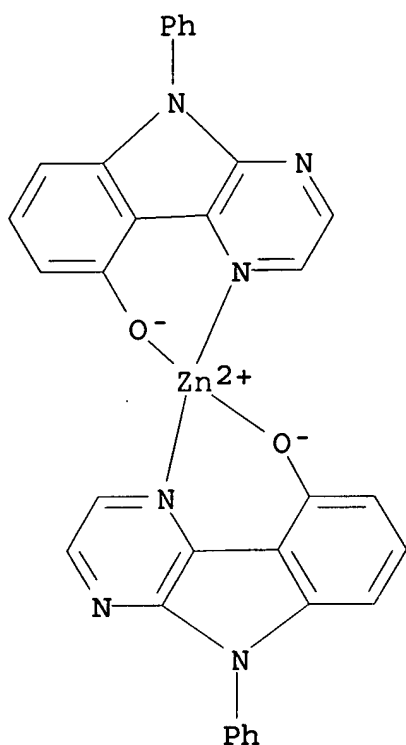


PAGE 2-A

/

Ph

RN 318989-59-2 HCA  
CN Zinc, bis(5-phenyl-5H-pyrazino[2,3-b]indol-9-olato-  
.kappa.N1,.kappa.O9)-, (T-4)- (9CI) (CA INDEX NAME)



- IC ICM C09K011-06  
ICS H05B033-14
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 76, 78
- ST **electroluminescent** device organometallic complex
- IT Phosphors  
(**electroluminescent**; org. **electroluminescent** elements using organometallic compd. emitting materials)
- IT **Electroluminescent** devices  
(org. **electroluminescent** elements using organometallic compd. emitting materials)
- IT 7429-90-5D, Aluminum, nitrogen heterocyclic ligand complexes, uses 7439-95-4D, Magnesium, organometallic compds., uses 7439-97-6D, Mercury, organometallic compds., uses 7440-05-3D, Palladium, organometallic compds., uses 7440-24-6D, Strontium, organometallic compds., uses 7440-28-0D, Thallium, organometallic compds., uses 7440-39-3D, Barium, organometallic compds., uses 7440-41-7D, Beryllium, nitrogen heterocyclic ligand complexes, uses 7440-43-9D, Cadmium, organometallic compds., uses 7440-50-8D, Copper, organometallic compds., uses 7440-55-3D, Gallium, nitrogen heterocyclic ligand complexes, uses 7440-66-6D, Zinc, nitrogen heterocyclic ligand complexes, uses 7440-70-2D, Calcium,

organometallic compds., uses 7440-74-6D, Indium, organometallic compds., uses 129227-36-7D, gallium complex 193622-12-7  
 318988-63-5D, aluminum and gallium complexes 318988-64-6D, zinc complex 318988-65-7D, beryllium complex 318988-66-8D, aluminum and gallium complexes 318988-67-9D, aluminum complex 318988-68-0D, gallium complex 318988-69-1 318988-70-4  
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 318988-76-0 318988-77-1 318988-78-2 318988-79-3 318988-80-6  
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 318988-91-9 318988-92-0 318988-93-1 318988-94-2  
 318988-95-3D, deriv., beryllium complex 318988-96-4  
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 318988-98-6D, aluminum complex 318988-99-7D, aluminum complex  
 318989-00-3D, zinc complex 318989-01-4D, gallium complex  
 318989-02-5 318989-03-6 318989-04-7 318989-05-8  
 318989-06-9D, aluminum complex 318989-07-0D, zinc complex  
 318989-08-1D, beryllium complex 318989-09-2D, gallium complex  
 318989-10-5D, aluminum complex 318989-11-6D, zinc complex  
 318989-12-7 318989-13-8 318989-14-9 318989-15-0 318989-16-1  
 318989-17-2 318989-18-3 318989-19-4 318989-20-7 318989-22-9  
 318989-23-0 318989-24-1 318989-25-2 318989-26-3 318989-27-4  
 318989-28-5 318989-29-6 318989-30-9 318989-31-0D, beryllium complex 318989-32-1 318989-33-2D, aluminum and gallium complexes  
 318989-34-3 318989-35-4 318989-36-5 318989-37-6 318989-38-7  
 318989-39-8 318989-40-1 318989-41-2 318989-42-3 318989-43-4  
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 318989-66-1 318989-67-2

(org. electroluminescent elements using organometallic compd. emitting materials)

IT 183021-20-7DP, aluminum and gallium complexes

(org. electroluminescent elements using organometallic compd. emitting materials)

IT 555-31-7, Aluminum isopropoxide 183021-20-7

(org. electroluminescent elements using organometallic compd. emitting materials)

L42 ANSWER 8 OF 23 HCA COPYRIGHT 2005 ACS on STN

134:93076 Material developments and light control in organic

**light-emitting** diode. Tokito, Shizuo; Taga, Yasunori (TOYOTA Central Research & Development Laboratories, INC., Nagakute, 480-1192, Japan). Molecular Crystals and Liquid Crystals Science and Technology, Section A: Molecular Crystals and Liquid Crystals, 349, 389-394 (English) 2000. CODEN: MCLCE9.

ISSN: 1058-725X. Publisher: Gordon & Breach Science Publishers.

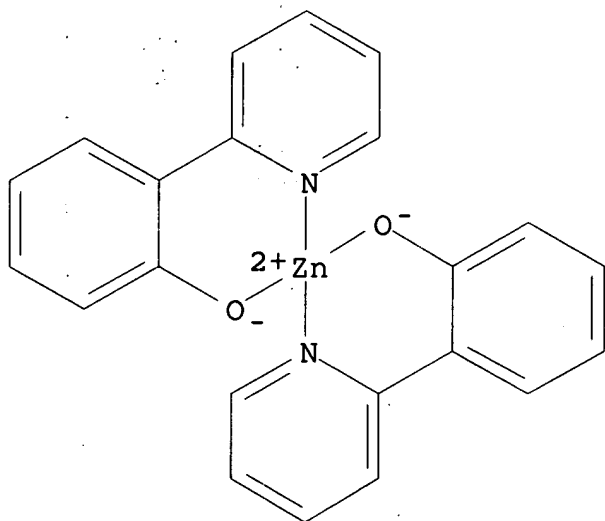
AB The authors report the influence of org. materials on the thermal stability and emission efficiency of org. **light-emitting diode (OLED)**. To improve the device performance several hole transporting materials and emitting materials were developed based on triphenylamine and metal-chelate complex, resp. The **electroluminescent** characteristics of the OLEDs are shown and discussed in view of properties of the materials. Control of **light emission** in the **OLED** with microcavity is presented to suggest a new application.

IT 193622-08-1 208187-79-5 213818-07-6  
213818-08-7 214075-03-3

(material developments and light control in org. **light-emitting diode**)

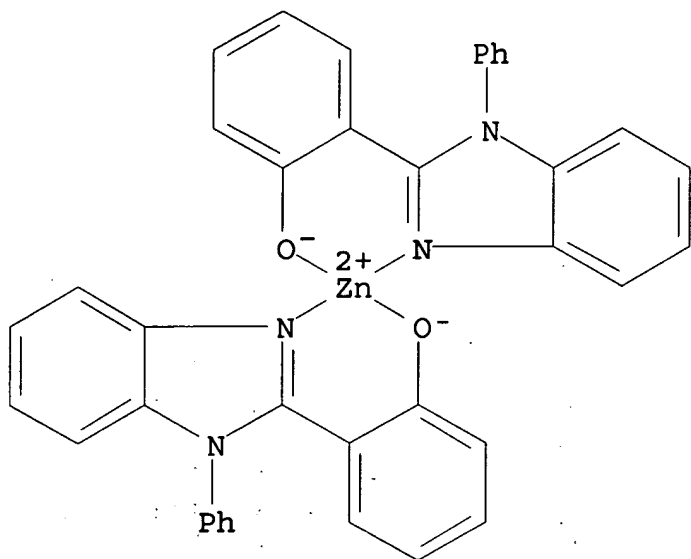
RN 193622-08-1 HCA

CN Zinc, bis[2-(2-pyridinyl-.kappa.N)phenolato-.kappa.O]-, (T-4) - (9CI)  
(CA INDEX NAME)



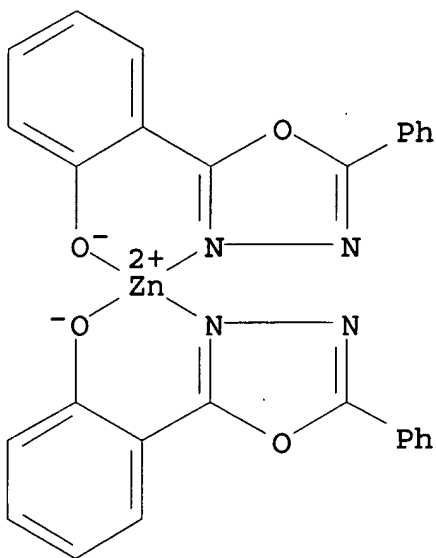
RN 208187-79-5 HCA

CN Zinc, bis[2-(1-phenyl-1H-benzimidazol-2-yl-.kappa.N3)phenolato-.kappa.O]-, (T-4) - (9CI) (CA INDEX NAME)



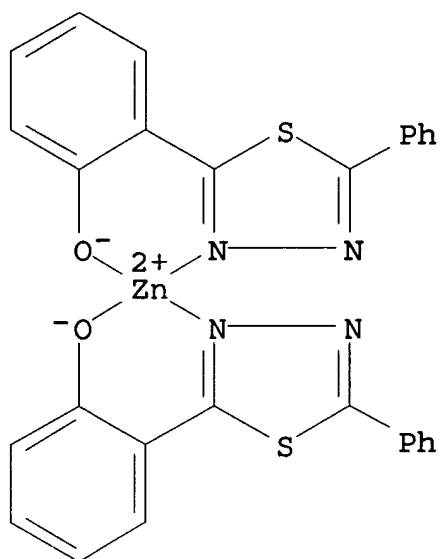
RN 213818-07-6 HCA

CN Zinc, bis[2-(5-phenyl-1,3,4-oxadiazol-2-yl-.kappa.N3)phenolato-.kappa.O]-, (T-4) - (9CI) (CA INDEX NAME)



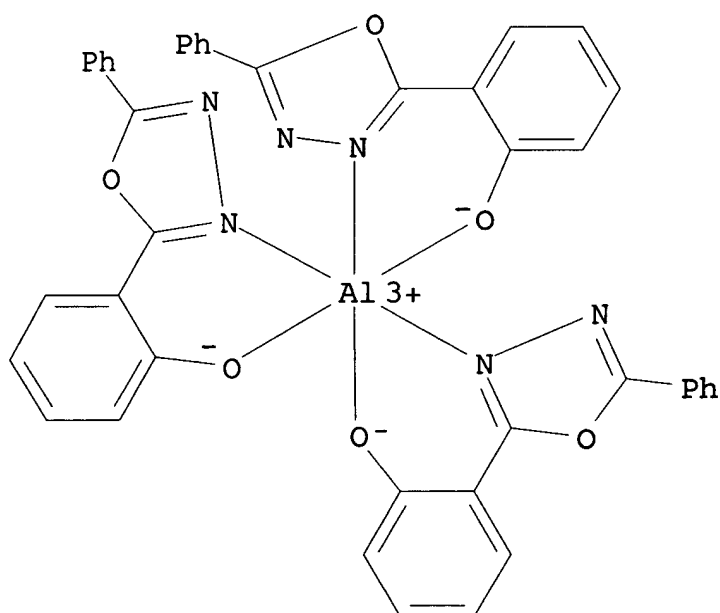
RN 213818-08-7 HCA

CN Zinc, bis[2-(5-phenyl-1,3,4-thiadiazol-2-yl-.kappa.N3)phenolato-.kappa.O]-, (T-4) - (9CI) (CA INDEX NAME)



RN 214075-03-3 HCA

CN Aluminum, tris[2-(5-phenyl-1,3,4-oxadiazol-2-yl-.kappa.N3)phenolato-.kappa.O]-, (OC-6-22)-(9CI) (CA INDEX NAME)



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

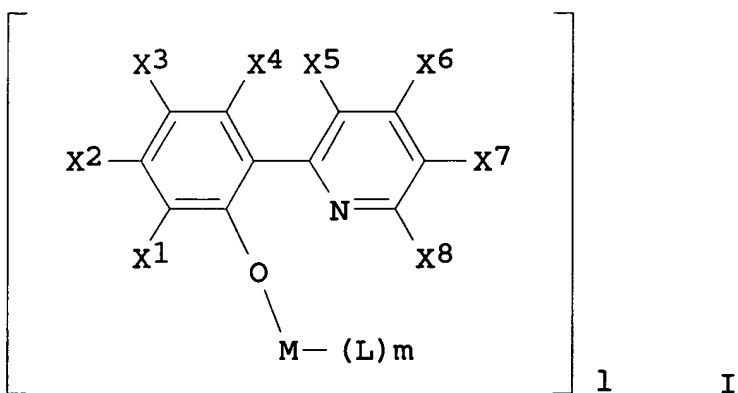
Section cross-reference(s): 22, 76

ST **light emitting** diode triphenylamine thermal

- stability
- IT **Electroluminescent** devices  
(material developments and light control in org. **light-emitting** diode)
- IT Thermal stability  
(material developments and light control in org. **light-emitting** diode in relation to)
- IT Luminescence, **electroluminescence**  
(of various zinc complex materials for org. **light-emitting** diode)
- IT 2085-33-8, Alq3 65181-78-4, TPD 105766-30-1 182069-71-2  
189196-95-0 193622-08-1 208187-79-5  
213818-07-6 213818-08-7 214075-03-3  
(material developments and light control in org. **light-emitting** diode)

L42 ANSWER 9 OF 23 HCA COPYRIGHT 2005 ACS on STN  
134:63622 Organic **electroluminescent** devices. Tanaka,  
Hiromitsu; Mohri, Makoto; Takeuchi, Hisato; Watanabe, Osamu; Mori,  
Tomohiko; Tokito, Seiji (Toyota Central Research and Development  
Laboratories, Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2000357588 A2  
20001226, 12 pp. (Japanese). CODEN: JKXXAF. APPLICATION:  
JP 1999-165944 19990611.

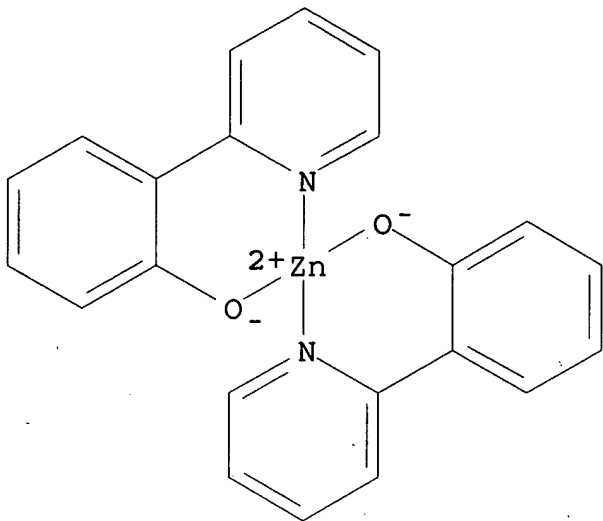
GI



- AB The devices comprise a phosphor I (M = coordinate metal; l = no. of pyridylphenol ligand; L = auxiliary ligand; m = no. of auxiliary ligand).
- IT 193622-08-1 314044-69-4 314044-70-7  
314044-71-8  
(org. **electroluminescent** devices)
- RN 193622-08-1 HCA

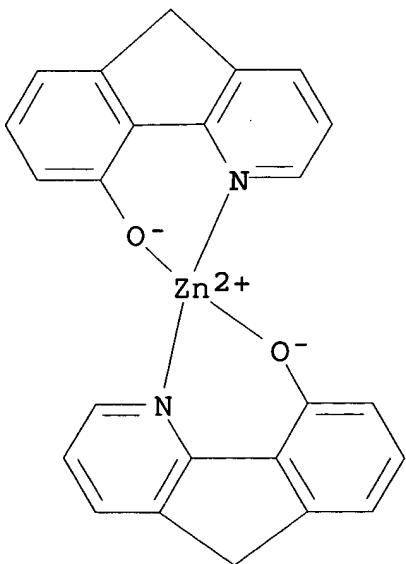


CN Zinc, bis[2-(2-pyridinyl-.kappa.N)phenolato-.kappa.O]-, (T-4) - (9CI)  
(CA INDEX NAME)



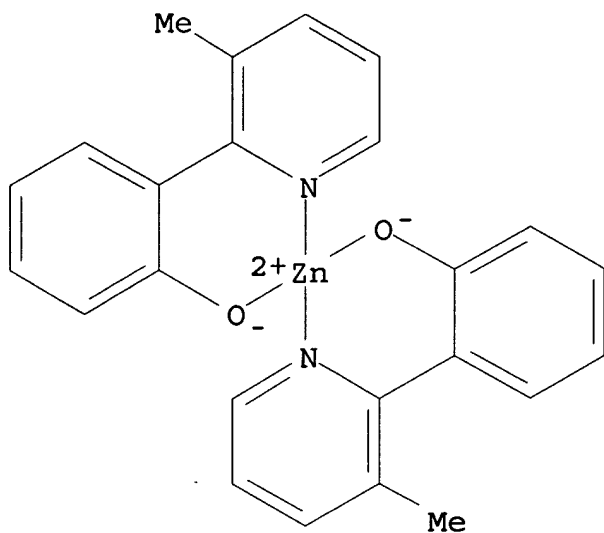
RN 314044-69-4 HCA

CN Zinc, bis(5H-indeno[1,2-b]pyridin-9-olato-.kappa.N1,.kappa.O9)-, (T-4) - (9CI) (CA INDEX NAME)

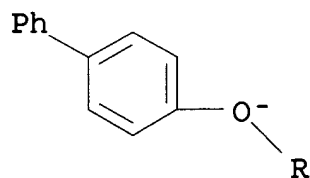
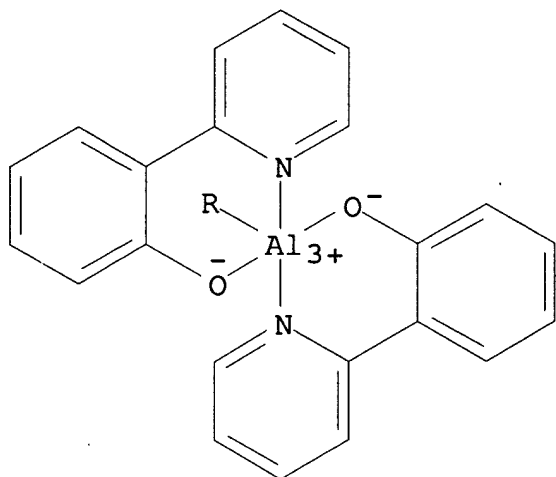


RN 314044-70-7 HCA

CN Zinc, bis[2-(3-methyl-2-pyridinyl-.kappa.N)phenolato-.kappa.O]-, (T-4) - (9CI) (CA INDEX NAME)



RN 314044-71-8 HCA  
 CN Aluminum, ([1,1'-biphenyl]-4-olato)bis[2-(2-pyridinyl-  
 .kappa.N)phenolato-.kappa.O]- (9CI) (CA INDEX NAME)



IC ICM H05B033-14

ICS C07D213-84; C07D221-16; C09K011-06; C07D213-30; C07F003-00;  
C07F003-06; C07F005-06; C07F007-30

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST org **electroluminescent** prydylphenol zinc coordination phosphor; aluminum prydylphenol coordination phosphor **electroluminescent**

IT Electrodes  
Glass substrates  
Luminescent substances  
Phosphors  
Thermal resistance  
(org. **electroluminescent** devices)

IT Coordination compounds  
Ligands  
(org. **electroluminescent** devices)

IT 7439-95-4, Magnesium, uses 7440-22-4, Silver, uses 50926-11-9, ITO 65181-78-4, TPD 193622-08-1 314044-69-4 314044-70-7 314044-71-8  
(org. **electroluminescent** devices)

L42 ANSWER 10 OF 23 HCA COPYRIGHT 2005 ACS on STN

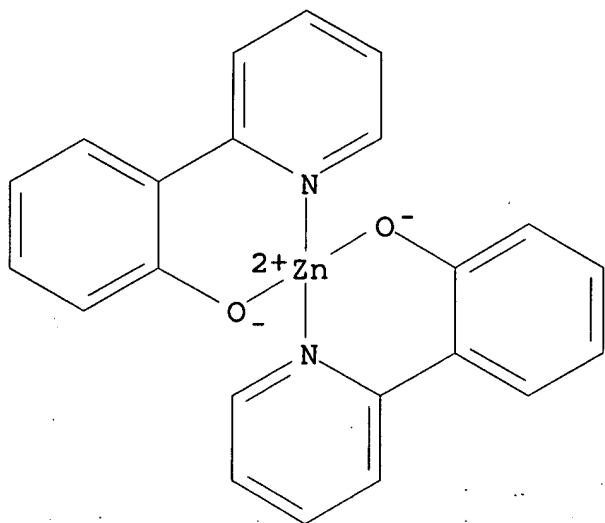
133:142403 Organic **light-emitting** diodes using novel metal-chelate complexes. Tokito, S.; Noda, K.; Tanaka, H.; Taga, Y.; Tsutsui, T. (TOYOTA Central Research and Development Laboratories Inc., Nagakute, Aichi, 480-1192, Japan). Synthetic Metals, 111-112, 393-396 (English) 2000. CODEN: SYMEDZ. ISSN: 0379-6779. Publisher: Elsevier Science S.A..

AB **Electroluminescent** (EL) properties of novel metal-chelate complexes were studied in the org. **light-emitting** diodes (OLEDs) comprised of the hole transport layer (HTL) and emitting layer (EML). The metal-chelate complexes have either polycyclic arom. or fused ring ligands, which coordinate to Zn or Al. Various **EL** emission colors over the range of blue to yellow were obtained. The OLEDs using the complexes with polycyclic arom. ligands showed desirable blue emission with a quantum efficiency of 1.5-1.7% at a luminance of 300 cd/m<sup>2</sup> and CIE color coordinates of around (0.17, 0.16). By perylene-doping into the blue-emitting complex, the improvement of **EL** efficiency was obsd. However, the complex with fused ring ligands gave a quantum efficiency of 0.8% at yellow emission.

IT 193622-08-1 208187-79-5 213818-07-6 213818-08-7 214075-03-3  
(org. **light-emitting** diodes using novel metal-chelate complexes)

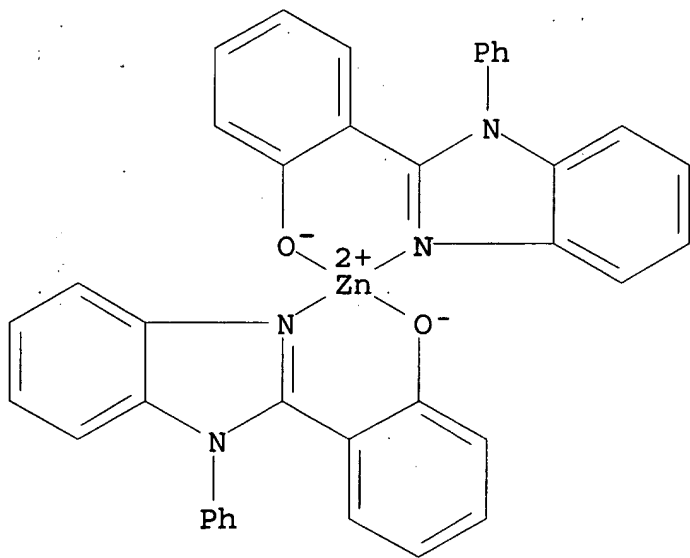
RN 193622-08-1 HCA

CN Zinc, bis[2-(2-pyridinyl-.kappa.N)phenolato-.kappa.O]-, (T-4) - (9CI)  
(CA INDEX NAME)



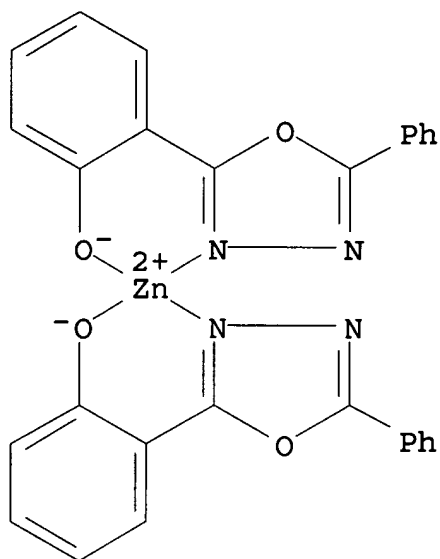
RN 208187-79-5 HCA

CN Zinc, bis[2-(1-phenyl-1H-benzimidazol-2-yl-κN3)phenolato-κO-], (T-4) - (9CI) (CA INDEX NAME)



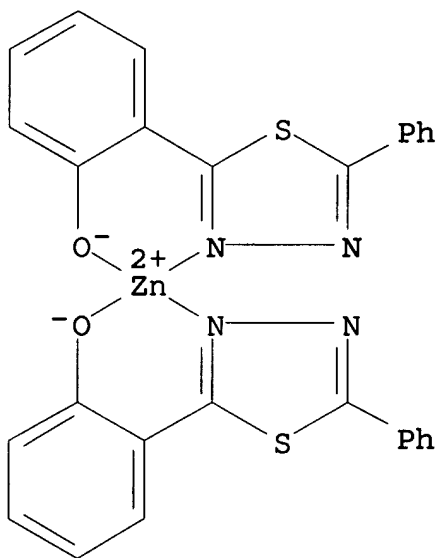
RN 213818-07-6 HCA

CN Zinc, bis[2-(5-phenyl-1,3,4-oxadiazol-2-yl-κN3)phenolato-κO-], (T-4) - (9CI) (CA INDEX NAME)



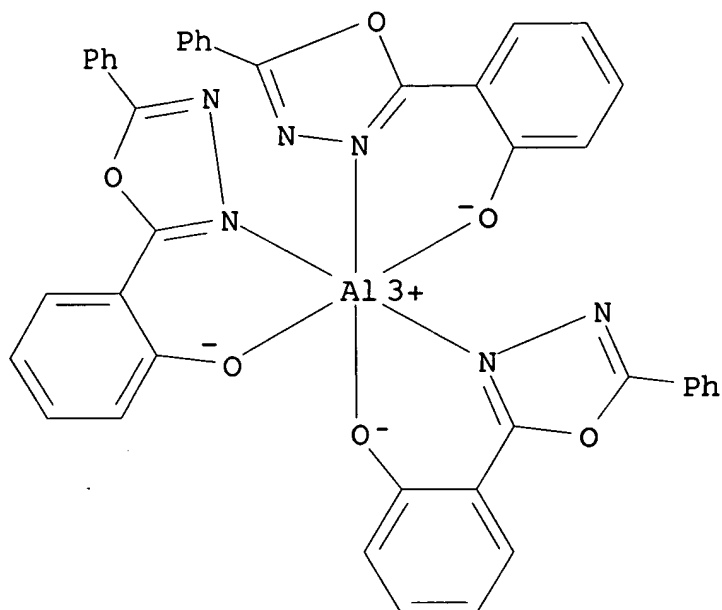
RN 213818-08-7 HCA

CN Zinc, bis[2-(5-phenyl-1,3,4-thiadiazol-2-yl-.kappa.N3)phenolato-.kappa.O]-, (T-4) - (9CI) (CA INDEX NAME)



RN 214075-03-3 HCA

CN Aluminum, tris[2-(5-phenyl-1,3,4-oxadiazol-2-yl-.kappa.N3)phenolato-.kappa.O]-, (OC-6-22) - (9CI) (CA INDEX NAME)



CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 76

IT Electric current-potential relationship

**Electroluminescent devices**

Hole transport

(org. **light-emitting** diodes using novel metal-chelate complexes)

IT 193622-08-1 208187-79-5 213620-77-0

213818-07-6 213818-08-7 214075-03-3

(org. **light-emitting** diodes using novel metal-chelate complexes)

IT 198-55-0, Perylene

(org. **light-emitting** diodes using novel metal-chelate complexes)

L42 ANSWER 11 OF 23 HCA COPYRIGHT 2005 ACS on STN

133:81414 Organometallic complexes for use in **light emitting** devices. Shi, Song Q. (Motorola, Inc., USA). U.S. US 6083634 A 20000704, 16 pp., Cont.-in-part of U.S. Ser. No. 304,451. (English). CODEN: USXXAM. APPLICATION: US 1997-886553 19970811. PRIORITY: US 1994-304451 19940912.

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

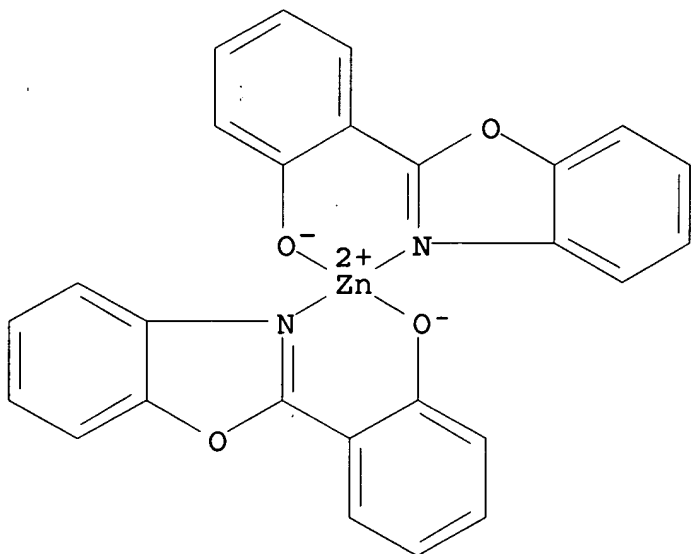
AB Org. **light-emitting** devices are described which comprise a layer of organometallic emissive material described by the general formulas I or II (M2 = divalent metal; M3 = trivalent metal; X = S, NH, or CH<sub>2</sub>; R1-8 and L1-5 = H or hydrocarbon groups or functional groups selected from cyano, halogen, haloalkyl, haloalkoxy, alkoxyl, amido, amino, sulfonyl, carbonyl, carbonyloxy and oxycarbonyl). Methods of fabricating the devices entailing the deposition of the emissive materials are also described. Examples in which X = O are also presented.

IT 23467-27-8

(**light-emitting** devices using organometallic complexes and their fabrication)

RN 23467-27-8 HCA

CN Zinc, bis[2-(2-benzoxazolyl-.kappa.N3)phenolato-.kappa.O]-, (T-4)-  
(9CI) (CA INDEX NAME)

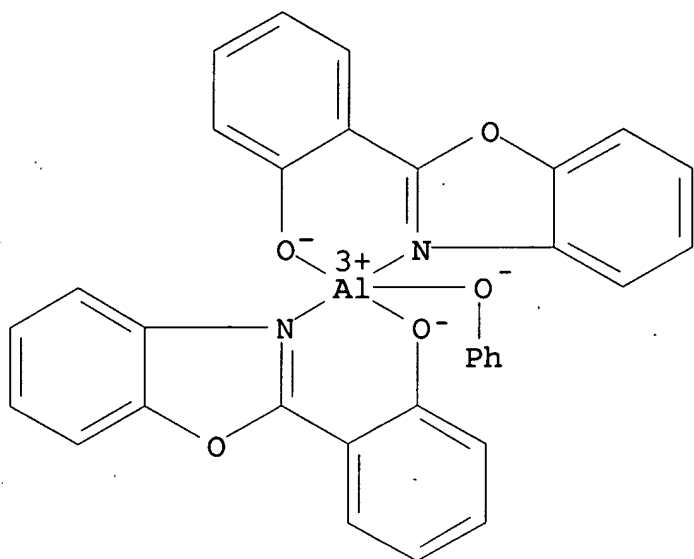


IT 176045-96-8P

(**light-emitting** devices using organometallic complexes and their fabrication)

RN 176045-96-8 HCA

CN Aluminum, bis[2-(2-benzoxazolyl-.kappa.N3)phenolato-.kappa.O]phenoxy-  
(9CI) (CA INDEX NAME)



IC ICM H05B033-14

INCL 428690000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 76, 78

ST organometallic complex **light emitting** device;  
oxyphenylbenzimidazole complex **light emitting**  
device; oxyphenylindole complex **light emitting**  
device; oxyphenylbenzothiazole complex **light**  
**emitting** device

IT **Electroluminescent** devices

**Electroluminescent** devices

Semiconductor device fabrication

(**light-emitting** devices using organometallic  
complexes and their fabrication)

IT 7429-90-5D, Aluminum, organometallic compds., uses 7439-95-4D,  
Magnesium, organometallic compds., uses 7440-41-7D, Beryllium,  
organometallic compds., uses 7440-55-3D, Gallium, organometallic  
compds., uses 7440-66-6D, Zinc, organometallic compds., uses  
7440-74-6D, Indium, organometallic compds., uses **23467-27-8**

(**light-emitting** devices using organometallic  
complexes and their fabrication)

IT 128904-10-9P **176045-96-8P**

(**light-emitting** devices using organometallic  
complexes and their fabrication)

IT 108-95-2, Phenol, reactions 835-64-3, 2-(2-Hydroxyphenyl)  
benzoxazole 7446-70-0, Aluminum chloride, reactions 13510-49-1,  
Beryllium sulfate



(light-emitting devices using organometallic complexes and their fabrication)

L42 ANSWER 12 OF 23 HCA COPYRIGHT 2005 ACS on STN

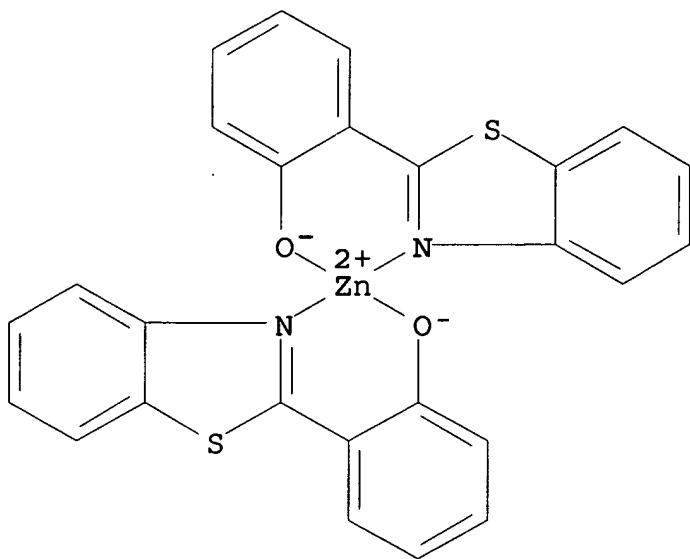
132:173455 Full color optical printer head made of organic **electroluminescent** device. Tsuruoka, Sigehisa; Fukuda, Tatsuo; Shimizu, Yukihiro; Kobori, Yoichi (Futaba Denshi Kogyo Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2000052591 A2 20000222, 12 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-227218 19980811.

AB The full color optical printer head made of an org. **electroluminescent** device forms an image with lights from the org. **electroluminescent** device, wherein the org. **electroluminescent** device has emission in 450-650 nm range. The printer head is small and light and requires a little power consumption and provides the stable operation.

IT 58280-31-2 203518-71-2  
(org. **electroluminescent** device of full color optical printer head)

RN 58280-31-2 HCA

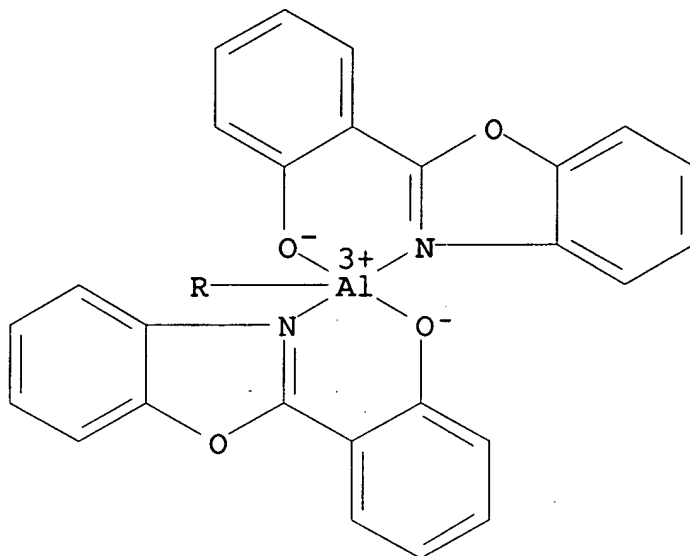
CN Zinc, bis[2-(2-benzothiazolyl-.kappa.N3)phenolato-.kappa.O]-, (T-4)-(9CI) (CA INDEX NAME)



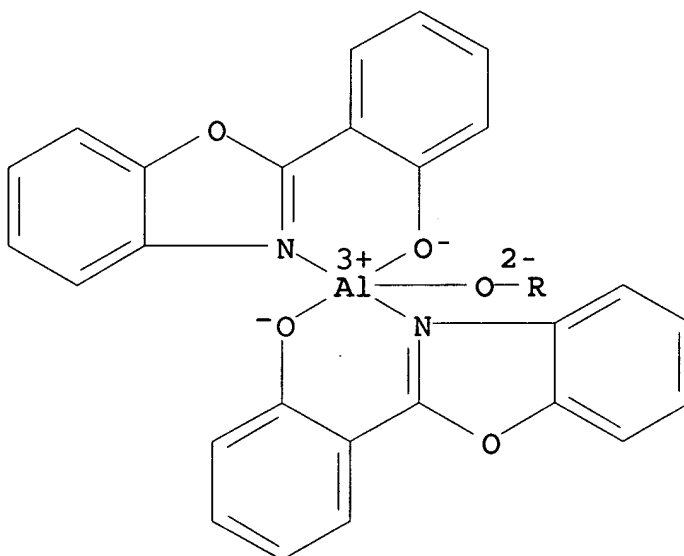
RN 203518-71-2 HCA

CN Aluminum, tetrakis[2-(2-benzoxazolyl-.kappa.N3)phenolato-.kappa.O]-.mu.-oxodi- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



IC ICM B41J002-44  
 ICS B41J002-45; B41J002-455; C09K011-06; H01L033-00; H04N001-036;  
 H05B033-12; H05B033-14  
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and

Other Reprographic Processes)

Section cross-reference(s): 73

ST optical printer head **electroluminescent** device

IT **Electroluminescent** devices

Optical imaging devices

Recording apparatus

(full color optical printer head made of org.

**electroluminescent** device)

IT 517-51-1 2085-33-8 6543-20-0 25067-59-8 **58280-31-2**

65181-78-4 163226-12-8 **203518-71-2** 258849-77-3

(org. **electroluminescent** device of full color optical printer head)

L42 ANSWER 13 OF 23 HCA COPYRIGHT 2005 ACS on STN

132:129800 Metal complexes and blue-emitting **electroluminescent** materials and devices using them. Igarashi, Tatsuya (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2000026472 A2 **20000125**, 14 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1998-198940 19980714.

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\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

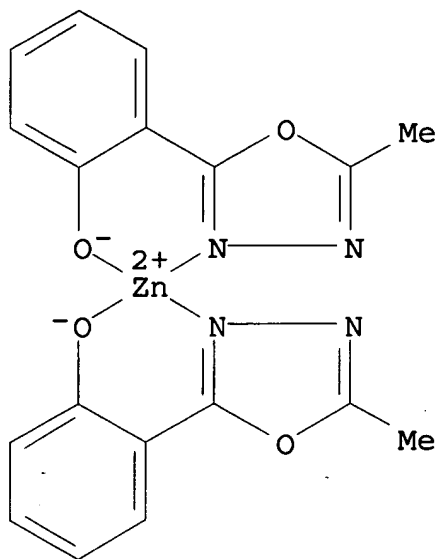
AB The metal complexes are prep'd. from oxadiazoles or thiadiazoles I (R1 = H, alkyl, alkenyl, alkynyl, heterocyclic group; X = O, S; M1 = H, cation; Z1 = at. group required to form 5- or 6-membered ring). The materials contain (A) the metal complexes, (B) II (R2 = alkyl; M2 = divalent or trivalent metal ion; Z2 = at. group required to form 5- or 6-membered ring; L2 = ligand; n2 = 1-4; m2 = 0-4), or (C) III (R3 = alkyl; M3 = divalent or trivalent metal ion; L3 = ligand; n3 = 1-4; m3 = 0-4; R31-R34 = H, substituent). The devices using .gtoreq.1 of the materials are also claimed. The metal complexes shows **light-emitting** and **electron-transporting** properties. The devices give blue luminescence with high color purity.

IT **256388-80-4P 256388-81-5P 256388-82-6P**

(oxadiazole- or thiadiazole-contg. metal complexes for blue-emitting **electroluminescent** devices)

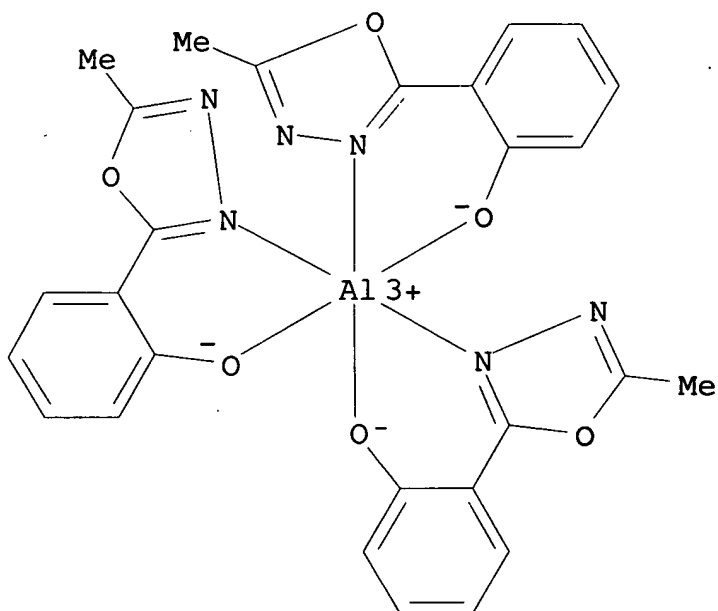
RN 256388-80-4 HCA

CN Zinc, bis[2-(5-methyl-1,3,4-oxadiazol-2-yl-.kappa.N3)phenolato-.kappa.O]-, (T-4) - (9CI) (CA INDEX NAME)



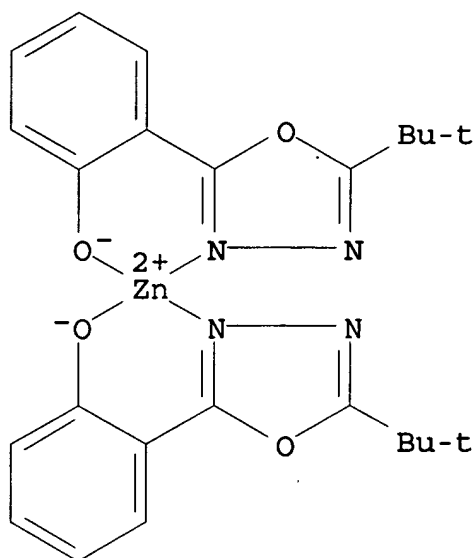
RN 256388-81-5 HCA

CN Aluminum, tris[2-(5-methyl-1,3,4-oxadiazol-2-yl-.kappa.N3)phenolato-.kappa.O]- (9CI) (CA INDEX NAME)



RN 256388-82-6 HCA

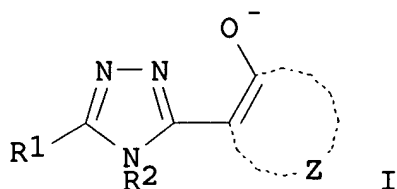
CN Zinc, bis[2-[5-(1,1-dimethylethyl)-1,3,4-oxadiazol-2-yl-.kappa.N3]phenolato-.kappa.O]-, (T-4)- (9CI) (CA INDEX NAME)



- IC ICM C07F003-06  
ICS C07F005-06; C09K011-06; H05B033-14; H05B033-22
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 78
- ST metal complex blue emitting **electroluminescent** device;  
oxadiazole metal complex **electroluminescent** device;  
thiadiazole metal complex **electroluminescent** device;  
**electron transporting** metal complex  
**electroluminescent** device
- IT **Electroluminescent** devices  
(blue-emitting; oxadiazole- or thiadiazole-contg. metal complexes  
for blue-emitting **electroluminescent** devices)
- IT 256388-80-4P 256388-81-5P 256388-82-6P  
(oxadiazole- or thiadiazole-contg. metal complexes for  
blue-emitting **electroluminescent** devices)
- IT 18233-19-7P 256371-17-2P  
(oxadiazole- or thiadiazole-contg. metal complexes for  
blue-emitting **electroluminescent** devices)
- IT 555-31-7, Aluminum triisopropoxide 557-34-6, Zinc diacetate  
936-02-7, Salicyl hydrazide 14777-29-8 68283-70-5  
(oxadiazole- or thiadiazole-contg. metal complexes for  
blue-emitting **electroluminescent** devices)
- L42 ANSWER 14 OF 23 HCA COPYRIGHT 2005 ACS on STN  
131:51807 Organic **electroluminescent** material for  
**electroluminescent** device. Okada, Hisashi (Fuji Photo Film  
Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 11144872 A2  
19990528 Heisei, 16 pp. (Japanese). CODEN: JKXXAF.

APPLICATION: JP 1997-308965 19971111.

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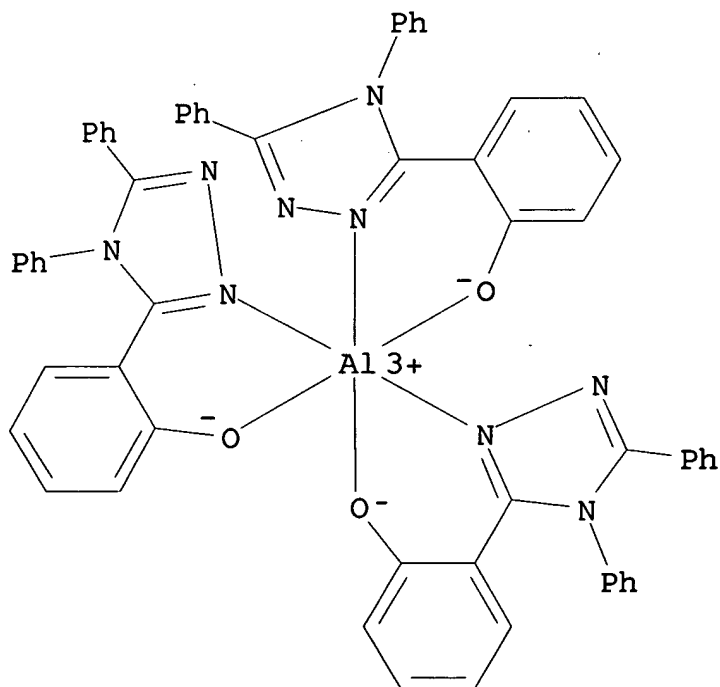
AB An org. **electroluminescent** material is a metal complex synthesized from a metal ion, such as  $\text{Be}^{2+}$ ,  $\text{Mg}^{2+}$ , etc., and a compd. represented by I [ $\text{R}_1 = \text{H}$  or org. group;  $\text{R}_2 = \text{H}$ , aliph. hydrocarbon, aryl and heterocyclic groups; and Z presents atoms forming 5 or 6 member rings].

IT 226704-63-8 227314-77-4 227315-55-1  
227317-57-9

(org. **electroluminescent** material for  
**electroluminescent** device)

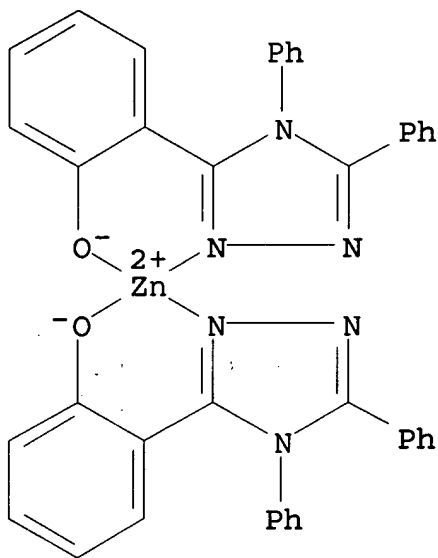
RN 226704-63-8 HCA

CN Aluminum, tris[2-(4,5-diphenyl-4H-1,2,4-triazol-3-yl-  
.kappa.N2)phenolato-.kappa.O]- (9CI) (CA INDEX NAME)



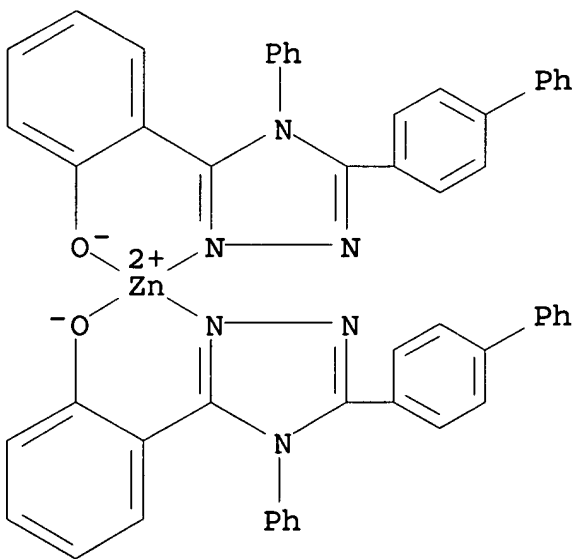
RN 227314-77-4 HCA

CN Zinc, bis[2-(4,5-diphenyl-4H-1,2,4-triazol-3-yl-.kappa.N2)phenolato-.kappa.O]-, (T-4) - (9CI) (CA INDEX NAME)



RN 227315-55-1 HCA

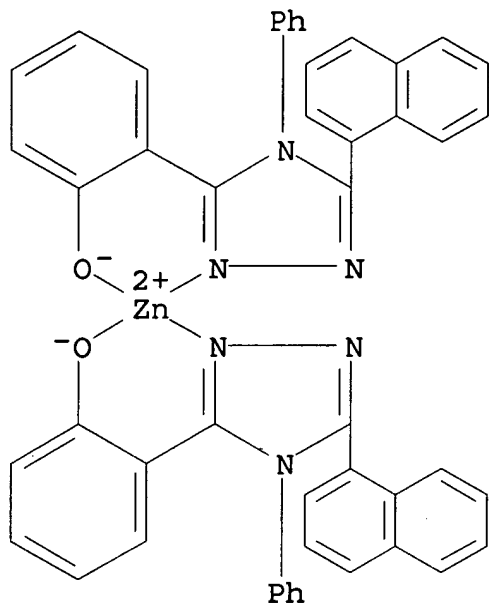
CN Zinc, bis[2-(5-[1,1'-biphenyl]-4-yl-4-phenyl-4H-1,2,4-triazol-3-yl-.kappa.N2)phenolato-.kappa.O]-, (T-4) - (9CI) (CA INDEX NAME)



RN 227317-57-9 HCA

CN Zinc, bis[2-[5-(1-naphthalenyl)-4-phenyl-4H-1,2,4-triazol-3-yl-

.kappa.N2]phenolato-.kappa.O]-, (T-4)- (9CI) (CA INDEX NAME)

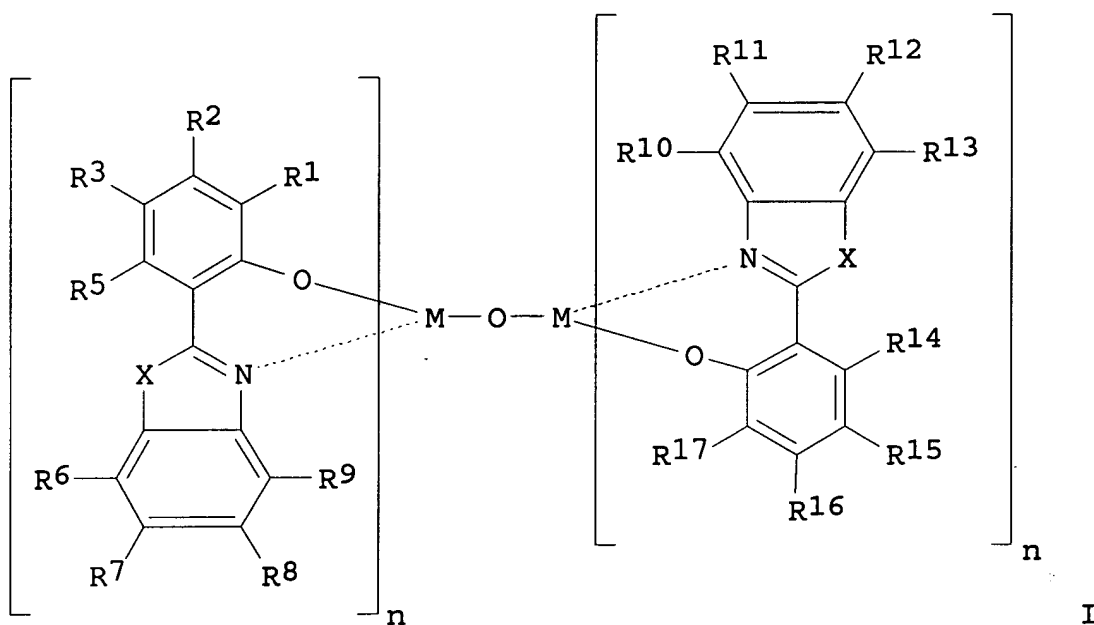


IC ICM H05B033-14  
ICS C09K011-06; H05B033-22  
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
ST org electroluminescent device metal complex triazole  
IT Phosphors  
(electroluminescent; org. electroluminescent material for electroluminescent device)  
IT Electroluminescent devices  
(org. electroluminescent material for electroluminescent device)  
IT Coordination compounds  
(org. electroluminescent material for electroluminescent device)  
IT 226704-63-8 227314-77-4 227315-55-1  
227317-57-9 227323-11-7 227323-92-4  
(org. electroluminescent material for electroluminescent device)

L42 ANSWER 15 OF 23 HCA COPYRIGHT 2005 ACS on STN  
130:45102 Organic electroluminescent materials and organic electroluminescent devices using them. Tamano, Michiko; Onikubo, Shunichi; Okutsu, Satoshi; Enokida, Toshio (Toyo Ink Mfg. Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10298545 A2 19981110 Heisei, 17 pp. (Japanese). CODEN: JKXXAF.  
APPLICATION: JP 1997-112087 19970430.



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AB The material has a formula I ( $X = S, O, CH_2$ ;  $R_1-17 = H, \text{halogen, cyano, alkyl, alkoxy, aryl, aryloxy, } NH_2, \text{heterocyclic}$ ;  $R_1-17$  may bond to form a ring;  $M = \text{divalent or trivalent metal atom}$ ;  $n = 1, 2$ ). The device shows high luminance and excellent stability in repeated use.

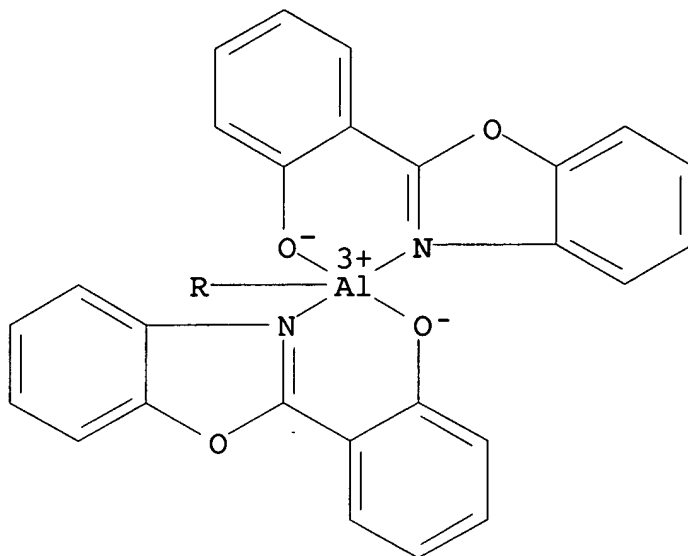
IT 203518-71-2 216884-51-4 216884-52-5  
 216884-53-6 216884-55-8 216884-57-0  
 216884-58-1 216884-59-2 216884-61-6  
 216884-62-7 216884-64-9 216969-43-6

(org. electroluminescent devices contg. metal chelate complexes)

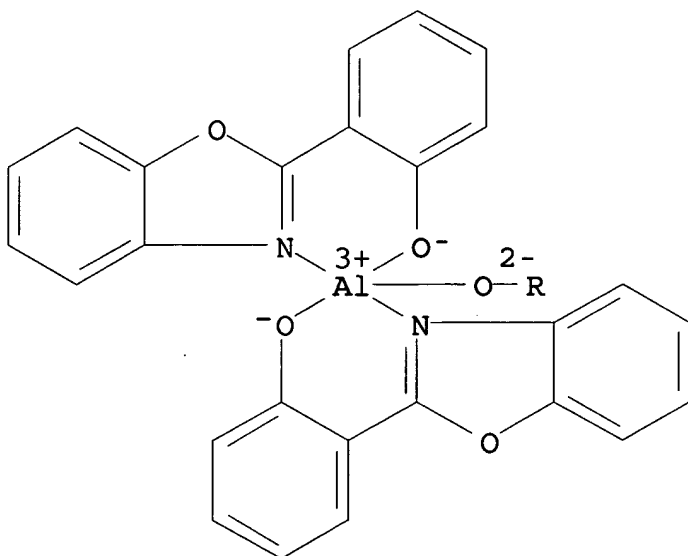
RN 203518-71-2 HCA

CN Aluminum, tetrakis[2-(2-benzoxazolyl-.kappa.N3)phenolato-.kappa.O]-.mu.-oxodi- (9CI) (CA INDEX NAME)

PAGE 1-A

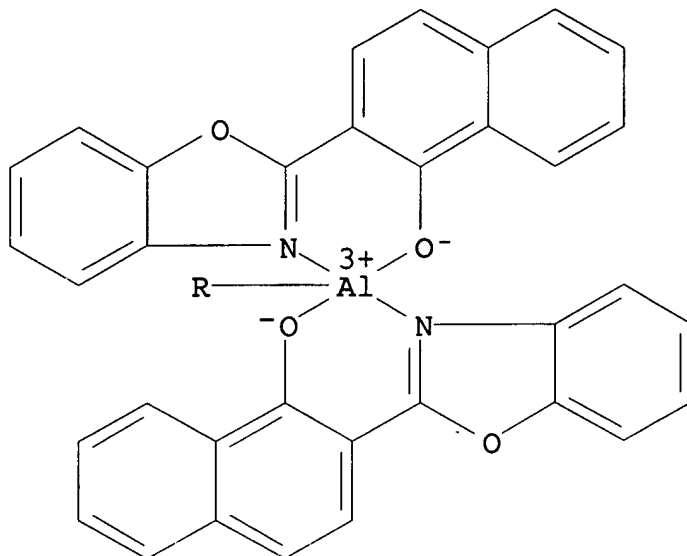


PAGE 2-A

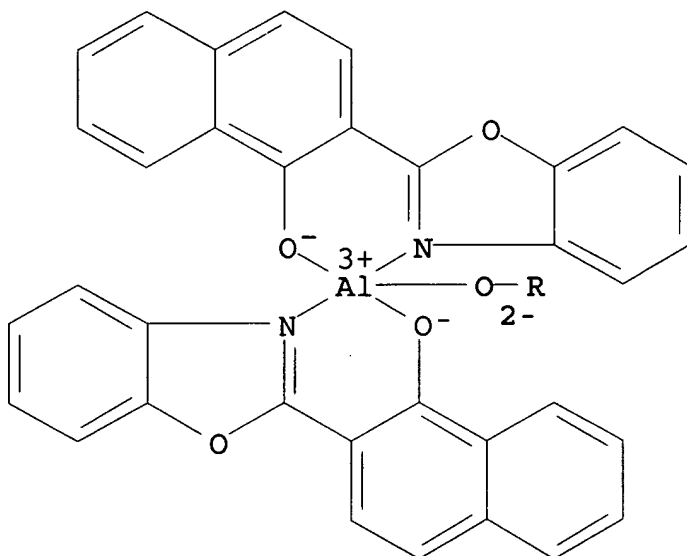


RN 216884-51-4 HCA  
CN Aluminum, tetrakis[2-(2-benzoxazolyl-.kappa.N3)-1-naphthalenolato-.kappa.O]-.mu.-oxodi- (9CI) (CA INDEX NAME)

PAGE 1-A

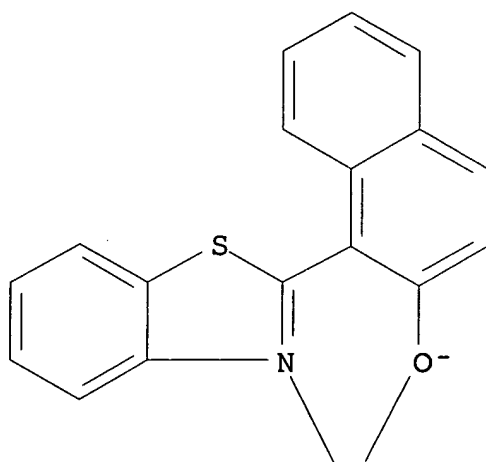


PAGE 2-A

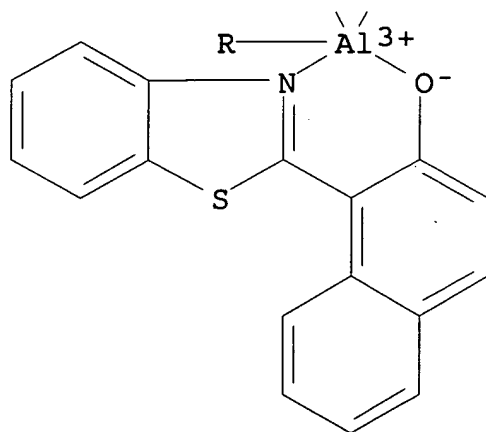


RN 216884-52-5 HCA  
CN Aluminum, tetrakis[1-(2-benzothiazolyl-.kappa.N3)-2-naphthalenolato-.kappa.O]-.mu.-oxodi- (9CI) (CA INDEX NAME)

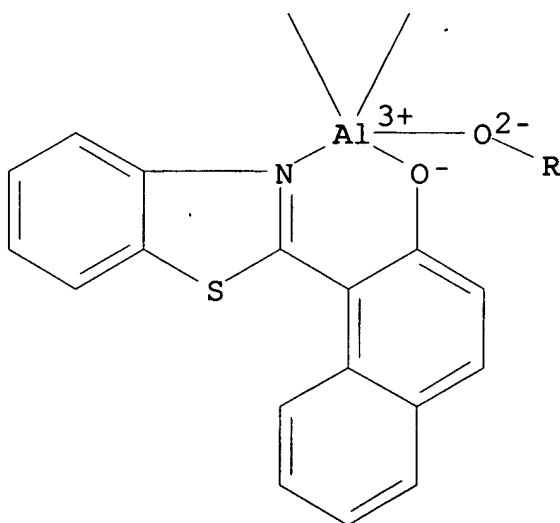
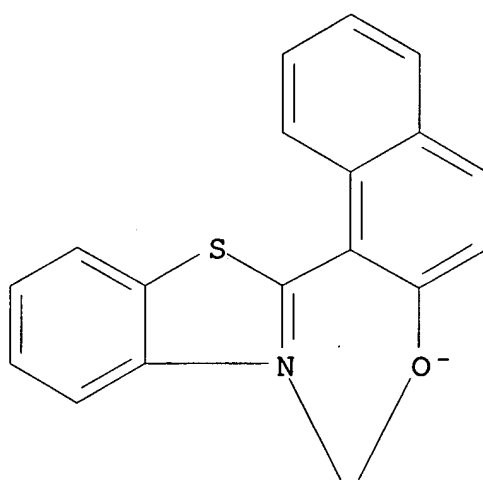
PAGE 1-A



PAGE 2-A



PAGE 3-A

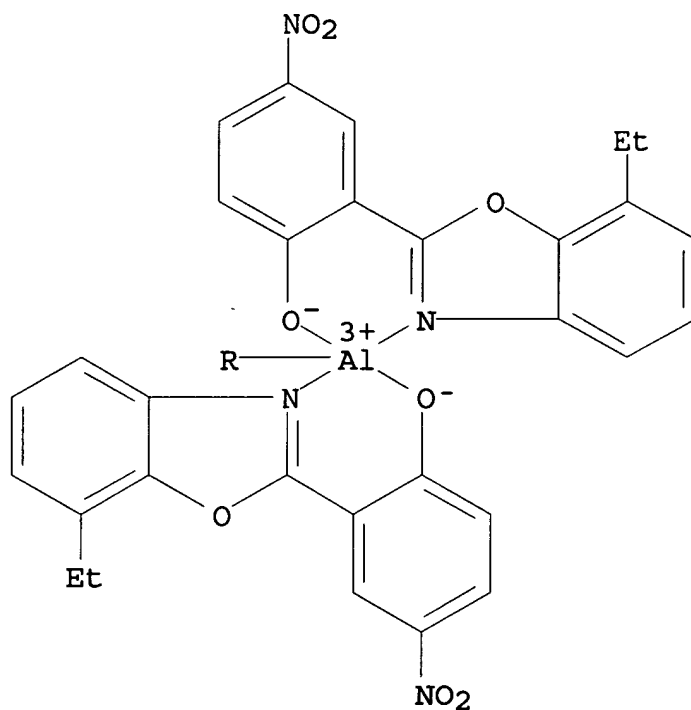


PAGE 4-A

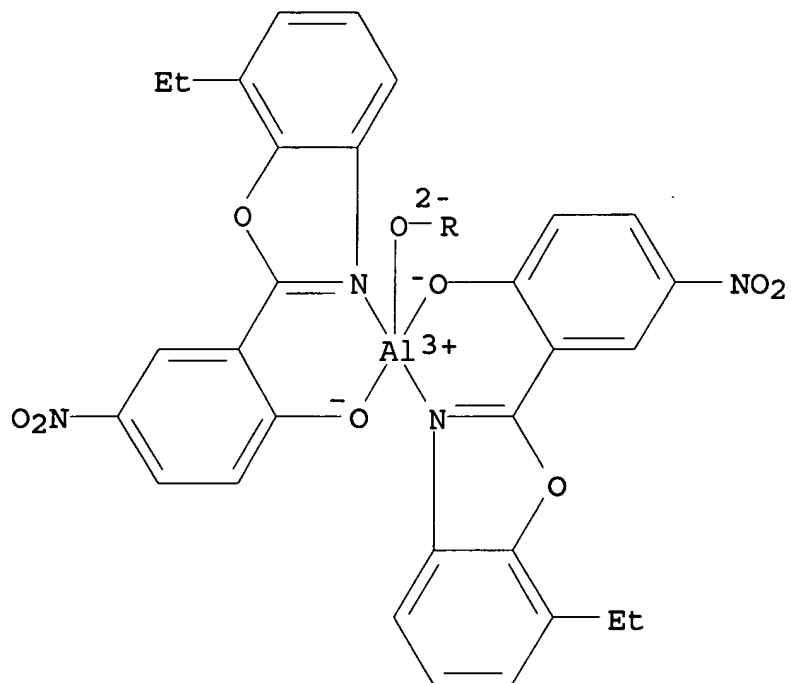
RN 216884-53-6 HCA

CN Aluminum, tetrakis[2-(7-ethyl-2-benzoxazolyl-.kappa.N3)-4-nitrophenolato-.kappa.O]-.mu.-oxodi- (9CI) (CA INDEX NAME)

PAGE 1-A

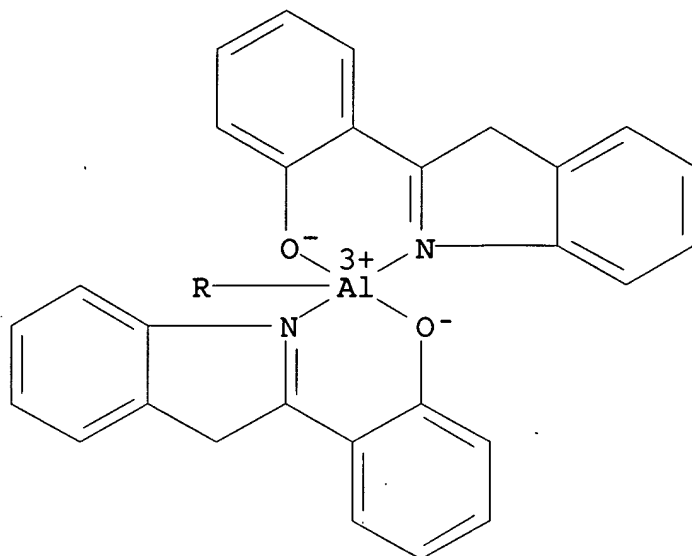


PAGE 2-A

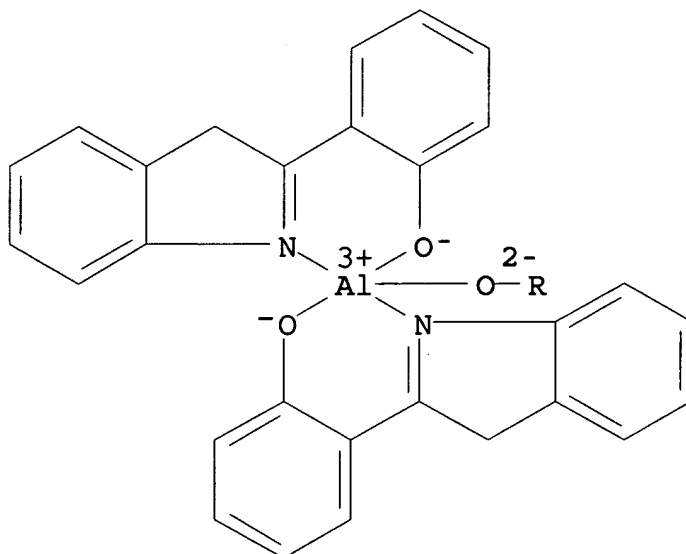


RN 216884-55-8 HCA  
CN Aluminum, tetrakis[2-(3H-indol-2-yl-.kappa.N)phenolato-.kappa.O]-  
.mu.-oxodi- (9CI) (CA INDEX NAME)

PAGE 1-A



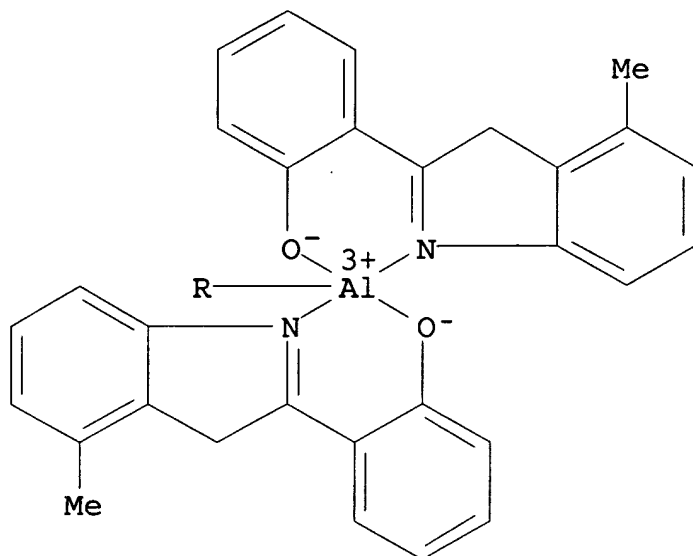
PAGE 2-A



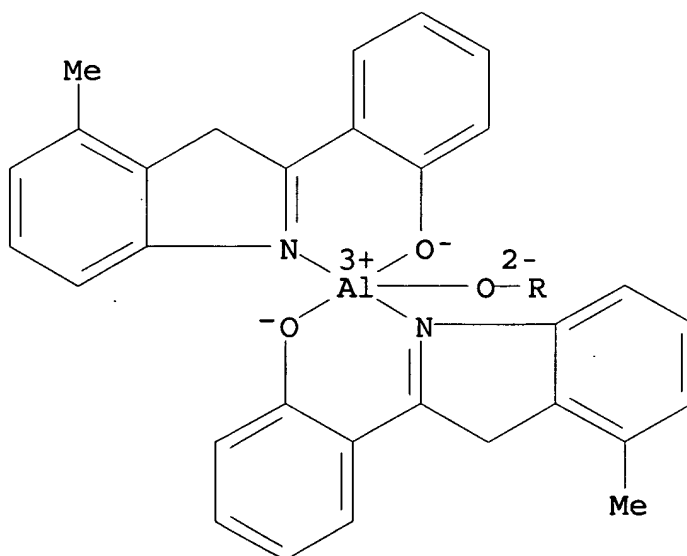
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CN Aluminum, tetrakis[2-(4-methyl-3H-indol-2-yl-.kappa.N)phenolato-.kappa.O]-.mu.-oxodi- (9CI) (CA INDEX NAME)



PAGE 1-A

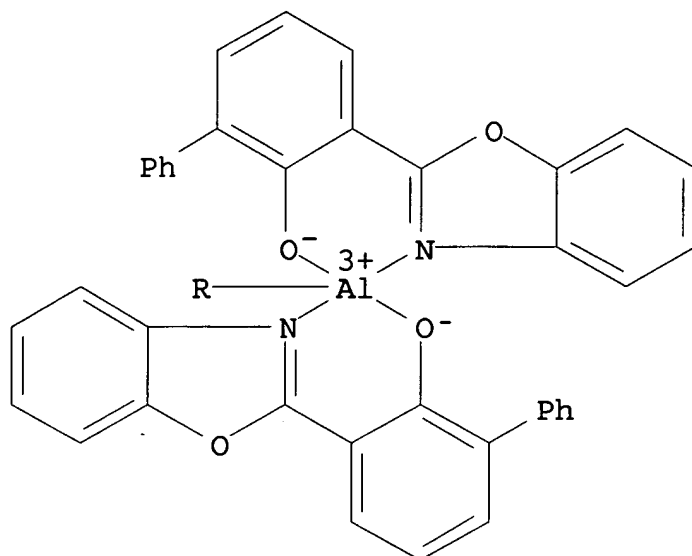


PAGE 2-A

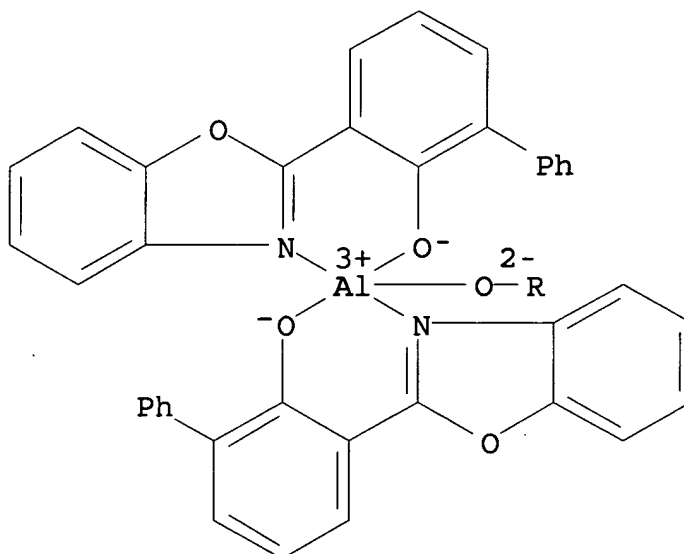


RN 216884-58-1 HCA  
CN Aluminum, tetrakis[3-(2-benzoxazolyl-.kappa.N3)[1,1'-biphenyl]-2-  
olato-.kappa.O]-.mu.-oxodi- (9CI) (CA INDEX NAME)

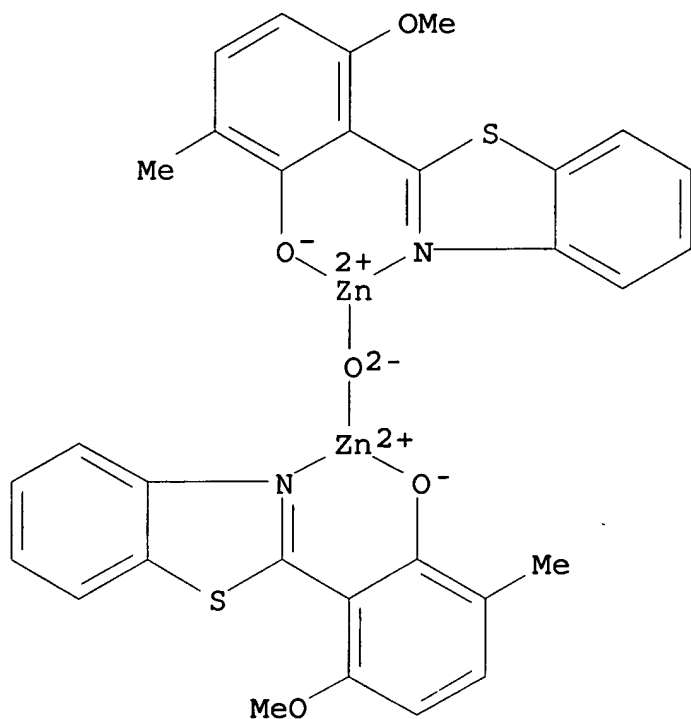
PAGE 1-A



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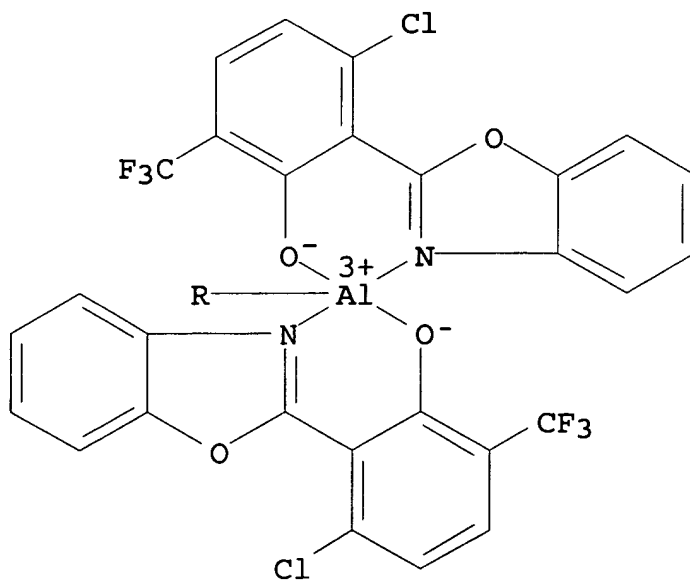


RN 216884-59-2 HCA  
CN Zinc, bis[2-(2-benzothiazolyl- $\kappa$ N3)-3-methoxy-6-methylphenolato- $\kappa$ O]- $\mu$ -oxodi- (9CI) (CA INDEX NAME)

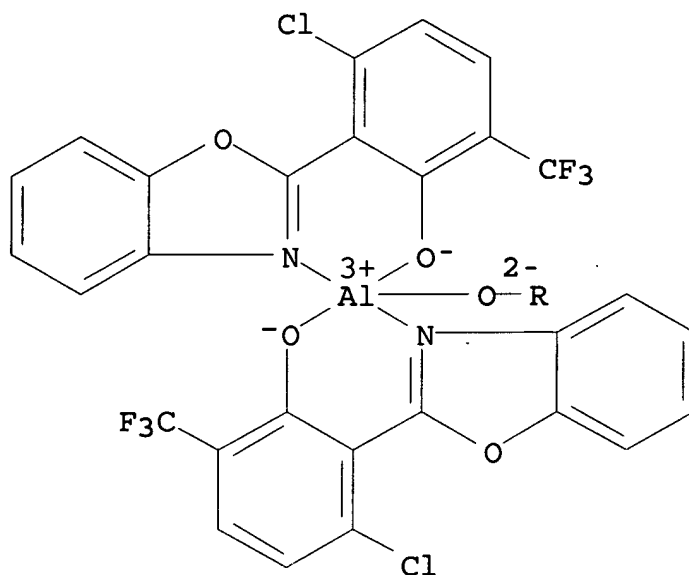


RN 216884-61-6 HCA  
 CN Aluminum, tetrakis[2-(2-benzoxazolyl-.kappa.N3)-3-chloro-6-(trifluoromethyl)phenolato-.kappa.O]-.mu.-oxodi- (9CI) (CA INDEX NAME)

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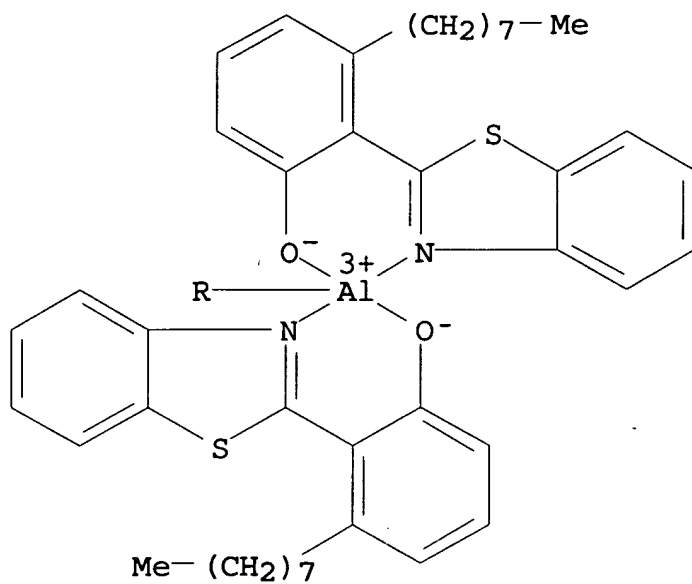


PAGE 2-A

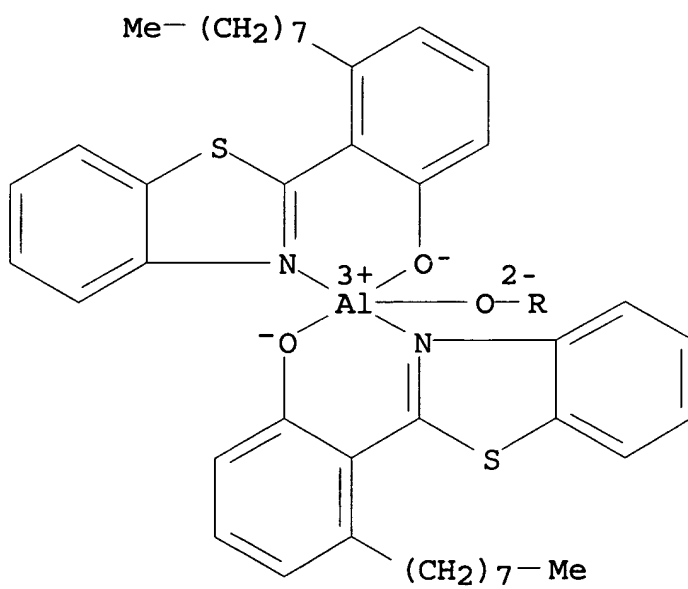


RN 216884-62-7 HCA  
CN Aluminum, tetrakis[2-(2-benzothiazolyl-.kappa.N3)-3-octylphenolato-.kappa.O]-.mu.-oxodi- (9CI) (CA INDEX NAME)

PAGE 1-A

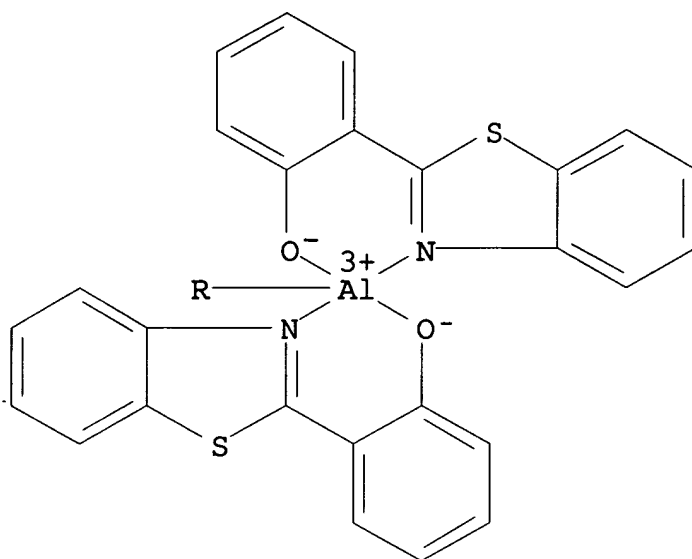


PAGE 2-A

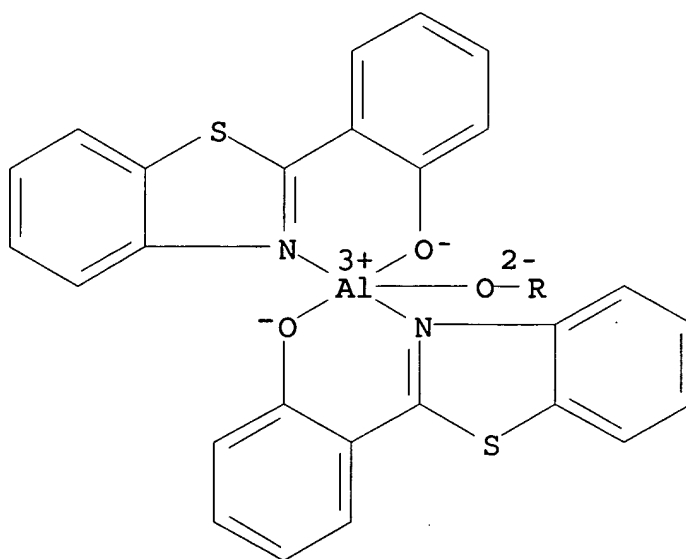


RN 216884-64-9 HCA  
 CN Aluminum, tetrakis[2-(2-benzothiazolyl-.kappa.N3)phenolato-.kappa.O] -  
 .mu.-oxodi- (9CI) (CA INDEX NAME)

PAGE 1-A

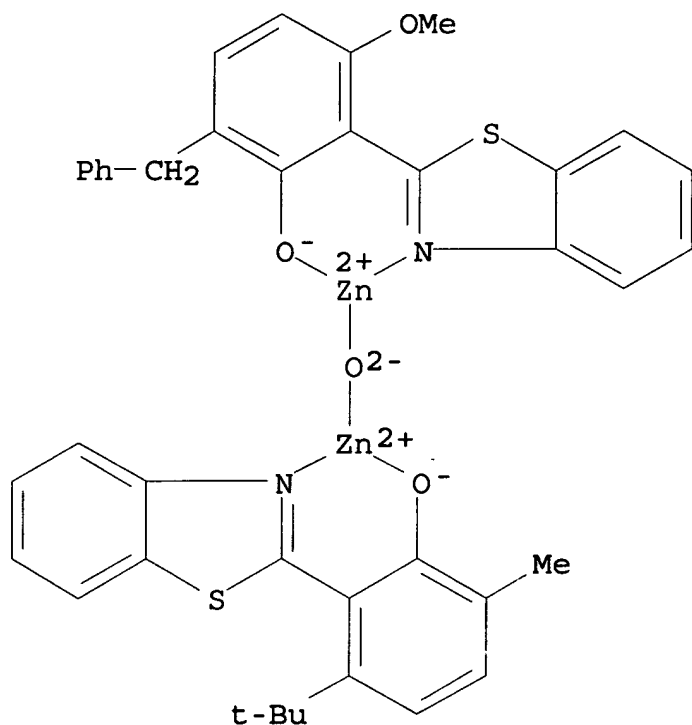


PAGE 2-A



RN 216969-43-6 HCA  
CN Zinc, [2-(2-benzothiazolyl-.kappa.N3)-3-(1,1-dimethylethyl)-6-methylphenolato-.kappa.O] [2-(2-benzothiazolyl-.kappa.N3)-3-methoxy-6-

(phenylmethyl)phenolato-.kappa.O]-.mu.-oxodi- (9CI) (CA INDEX NAME)



IC ICM C09K011-06  
ICS H05B033-14; H05B033-22

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 78

ST **electroluminescent** device metal chelate arom complex

IT Phosphors  
(**electroluminescent**; org. **electroluminescent** devices contg. metal chelate complexes)

IT **Electroluminescent** devices  
(org. **electroluminescent** devices contg. metal chelate complexes)

IT Chelates  
(org. **electroluminescent** devices contg. metal chelate complexes)

IT 203518-71-2 216884-51-4 216884-52-5  
216884-53-6 216884-54-7 216884-55-8  
216884-56-9 216884-57-0 216884-58-1  
216884-59-2 216884-60-5 216884-61-6  
216884-62-7 216884-63-8 216884-64-9  
216967-42-9 216968-58-0 216969-43-6 216969-65-2  
(org. **electroluminescent** devices contg. metal chelate complexes)

L42 ANSWER 16 OF 23 HCA COPYRIGHT 2005 ACS on STN

129:283189 Novel metal-chelate emitting materials based on polycyclic aromatic ligands for **electroluminescent** devices. Tanaka, Hiromitsu; Tokito, Shizuo; Taga, Yasunori; Okada, Akane (Toyota Central R&D Laboratories Inc., Nagakute, Aichi, 480-11, Japan). Journal of Materials Chemistry, 8(9), 1999-2003 (English) 1998. CODEN: JMACEP. ISSN: 0959-9428. Publisher: Royal Society of Chemistry.

AB We have designed and synthesized novel metal-chelate complexes based on polycyclic arom. ligands for **electroluminescent** devices. These complexes exhibited strong luminescence with blue and green colors. **EL** properties of devices using these complexes for an emitting layer were studied. Several good emitting materials were obtained and the **EL** properties were found to strongly depend on the ligand structure.

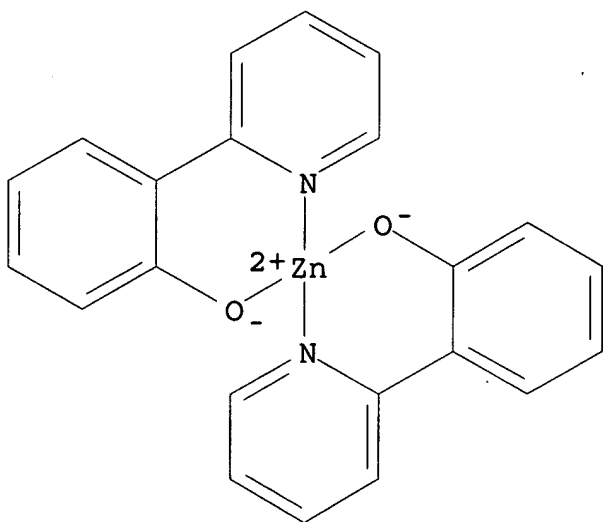
IT 193622-08-1P 208187-79-5P 213818-07-6P

213818-08-7P 214075-03-3P

(prepn. of light-emitting polycyclic heteroarom. metal complexes for **electroluminescent** devices and their **electroluminescence** properties)

RN 193622-08-1 HCA

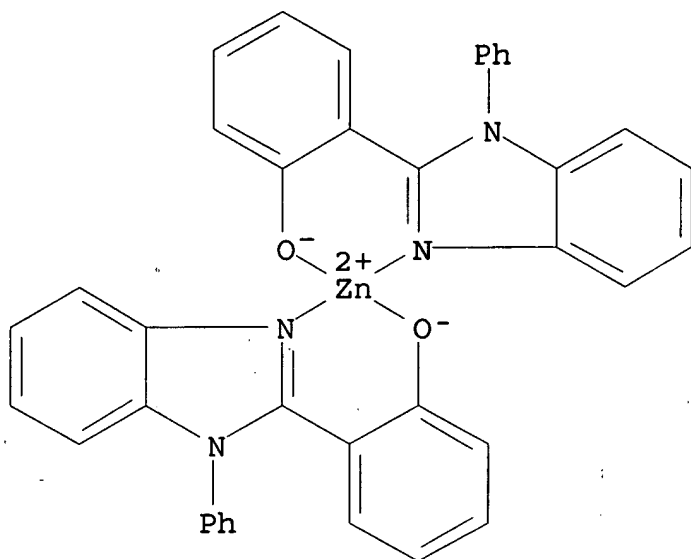
CN Zinc, bis[2-(2-pyridinyl-.kappa.N)phenolato-.kappa.O]-, (T-4) - (9CI)  
(CA INDEX NAME)



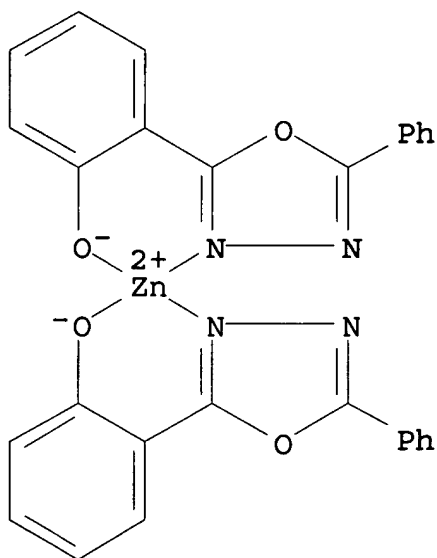
RN 208187-79-5 HCA

CN Zinc, bis[2-(1-phenyl-1H-benzimidazol-2-yl-.kappa.N3)phenolato-.kappa.O]-, (T-4) - (9CI) (CA INDEX NAME)

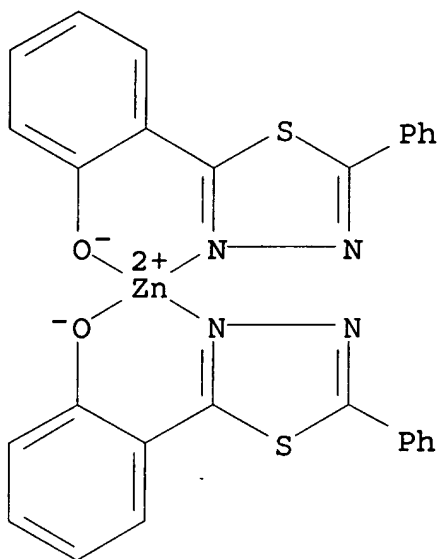




RN 213818-07-6 HCA  
 CN Zinc, bis[2-(5-phenyl-1,3,4-oxadiazol-2-yl-.kappa.N3)phenolato-.kappa.O]-, (T-4) - (9CI) (CA INDEX NAME)

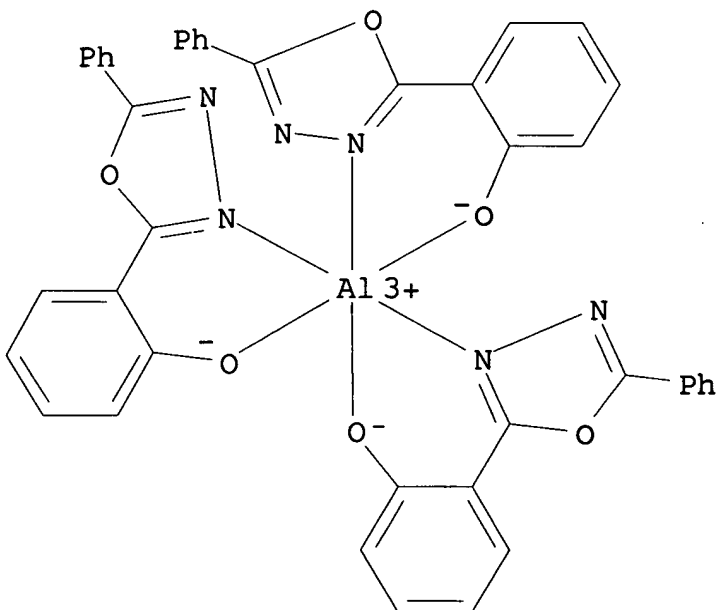


RN 213818-08-7 HCA  
 CN Zinc, bis[2-(5-phenyl-1,3,4-thiadiazol-2-yl-.kappa.N3)phenolato-.kappa.O]-, (T-4) - (9CI) (CA INDEX NAME)



RN 214075-03-3 HCA

CN Aluminum, tris[2-(5-phenyl-1,3,4-oxadiazol-2-yl-.kappa.N3)phenolato-.kappa.O]-, (OC-6-22)-(9CI) (CA INDEX NAME)



CC 73-12 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 28, 78

ST polycyclic heteroarom metal complex prepn

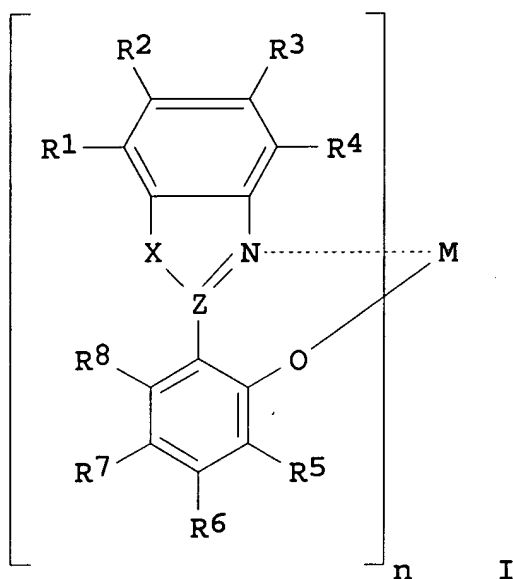
- electroluminescence; electroluminescent device**  
polycyclic heteroarom metal complex
- IT Polycyclic compounds  
(arom., heteroarom.; prepn. of polycyclic heteroarom. ligands for novel metal-chelate **light-emitting** materials in **electroluminescent** devices)
- IT Heterocyclic compounds  
(arom., polycyclic; prepn. of polycyclic heteroarom. ligands for novel metal-chelate **light-emitting** materials in **electroluminescent** devices)
- IT Phosphors  
(**electroluminescent**; prepn. of polycyclic heteroarom. ligands for novel metal-chelate **light-emitting** materials in **electroluminescent** devices)
- IT Aromatic compounds  
(heterocyclic, polycyclic; prepn. of polycyclic heteroarom. ligands for novel metal-chelate **light-emitting** materials in **electroluminescent** devices)
- IT Aromatic compounds  
(polycyclic, heteroarom.; prepn. of polycyclic heteroarom. ligands for novel metal-chelate **light-emitting** materials in **electroluminescent** devices)
- IT **Electroluminescent devices**  
Luminescence, **electroluminescence**  
(prepn. of polycyclic heteroarom. ligands for novel metal-chelate **light-emitting** materials in **electroluminescent** devices)
- IT 193622-08-1P 208187-79-5P 213818-07-6P  
213818-08-7P 214075-03-3P  
(prepn. of **light-emitting** polycyclic heteroarom. metal complexes for **electroluminescent** devices and their **electroluminescence** properties)
- IT 534-85-0, N-Phenyl-1,2-phenylenediamine 578-57-4,  
o-Methoxybromobenzene 579-75-9, o-Anisic acid 613-94-5,  
Benzoylhydrazine 21615-34-9, o-Methoxybenzoyl chloride  
(prepn. of polycyclic heteroarom. ligands for novel metal-chelate **light-emitting** materials in **electroluminescent** devices)
- IT 1874-42-6P 4291-08-1P 5957-89-1P 6781-63-1P 17453-26-8P  
18233-24-4P 33421-36-2P 94212-05-2P  
(prepn. of polycyclic heteroarom. ligands for novel metal-chelate **light-emitting** materials in **electroluminescent** devices)

L42 ANSWER 17 OF 23 HCA COPYRIGHT 2005 ACS on STN

129:87844 Organic **electroluminescent** material and organic **electroluminescent** device with it. Enokida, Toshio; Tamano, Michiko; Onikubo, Shunichi; Okutsu, Satoshi (Toyo Ink Mfg. Co.,

Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 10140145 A2  
 19980526 Heisei, 17 pp. (Japanese). CODEN: JKXXAF.  
 APPLICATION: JP 1996-292274 19961105.

GI



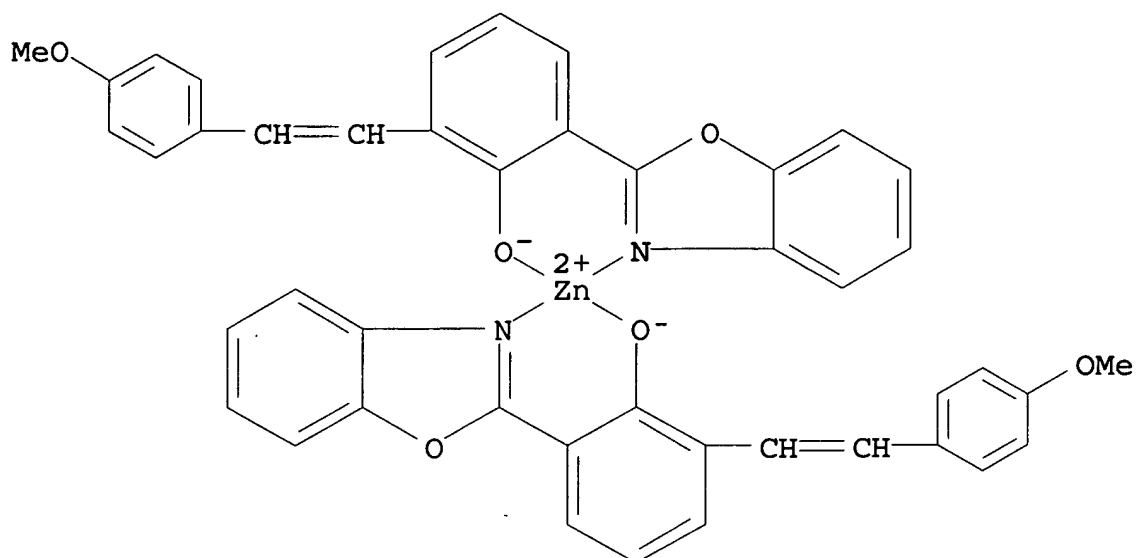
AB The material has a formula I [X = O, S, NR<sub>9</sub>, CR<sub>10</sub>R<sub>11</sub>; R<sub>1</sub>-R<sub>11</sub> = CY<sub>1</sub>:CY<sub>2</sub>Y<sub>3</sub>, H, halo, cyano, NO<sub>2</sub>, OH, siloxy, acyl, CO<sub>2</sub>H, SO<sub>3</sub>H, (cyclo) alkyl, alkylthio, alkoxy, NH<sub>3</sub>, aryl, aryloxy, arylthio, heterocyclic; Y<sub>1</sub>-Y<sub>3</sub> = H, cyano, (cyclo) alkyl, aryl, heterocyclic; Y<sub>2</sub> and Y<sub>3</sub> and adjacent groups of R<sub>1</sub>-R<sub>8</sub> may bond to form an O-, S-, or N-contg. ring; Z = C, N; M = divalent or tetravalent metal; n = 2-4 integer]. The device has a pair of electrodes sandwiching a **light-emitting** layer or a **light-emitting** layer-contg. org. compd. thin film layer, in which at least .gtoreq.1 the layers contain the material as an electron injecting substance. The device shows high luminescence and long life.

IT 209175-25-7P

(org. electroluminescent device contg. arom. compd.  
 metal complex electron-injecting substance)

RN 209175-25-7 HCA

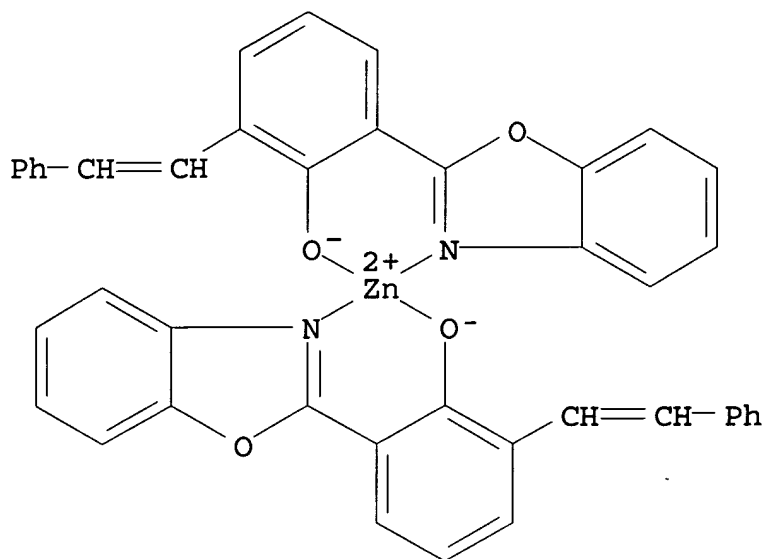
CN Zinc, bis[2-(2-benzoxazolyl-.kappa.N3)-6-[2-(4-methoxyphenyl)ethenyl]phenolato-.kappa.O]-, (T-4)- (9CI) (CA INDEX NAME)



IT 209174-83-4 209174-85-6 209174-86-7  
 209174-87-8 209174-90-3 209174-92-5  
 209174-94-7 209174-96-9 209174-98-1  
 209175-01-9 209175-03-1 209175-05-3  
 209175-07-5 209175-09-7 209175-12-2  
 209175-13-3 209175-16-6 209175-19-9

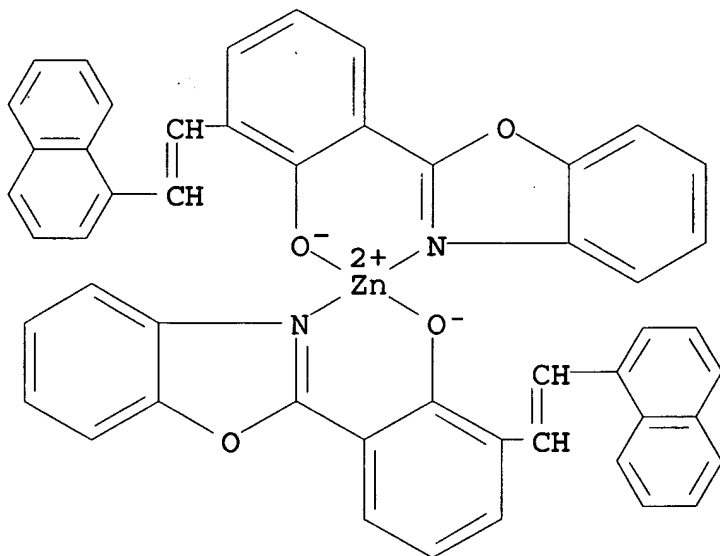
(org. electroluminescent device contg. arom. compd.  
 metal complex electron-injecting substance)

RN 209174-83-4 HCA  
 CN Zinc, bis[2-(2-benzoxazolyl-.kappa.N3)-6-(2-phenylethenyl)phenolato-  
 .kappa.O]-, (T-4)- (9CI) (CA INDEX NAME)



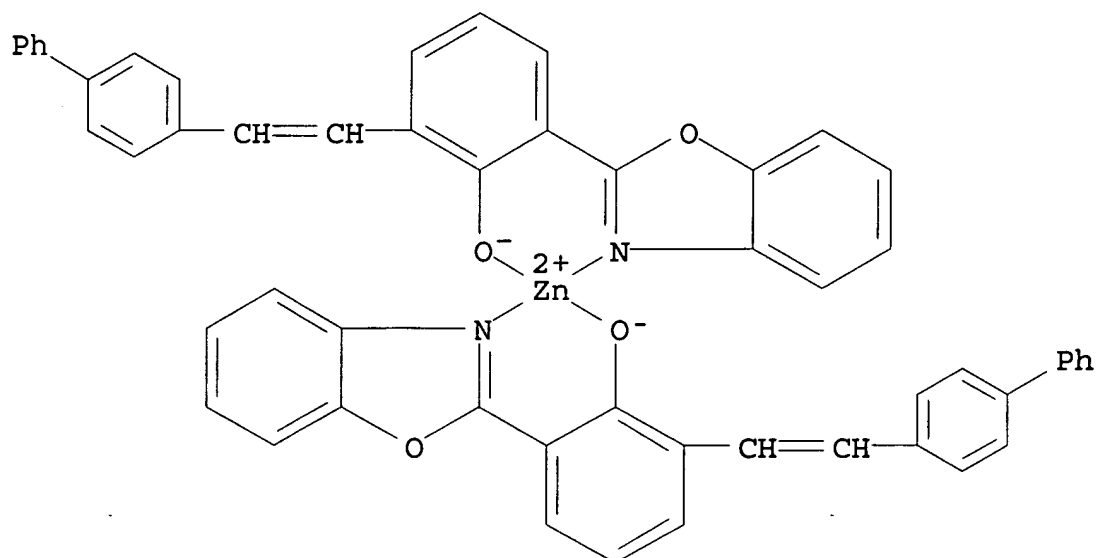
RN 209174-85-6 HCA

CN Zinc, bis[2-(2-benzoxazolyl-.kappa.N3)-6-[2-(1-naphthalenyl)ethenyl]phenolato-.kappa.O]-, (T-4) - (9CI) (CA INDEX NAME)



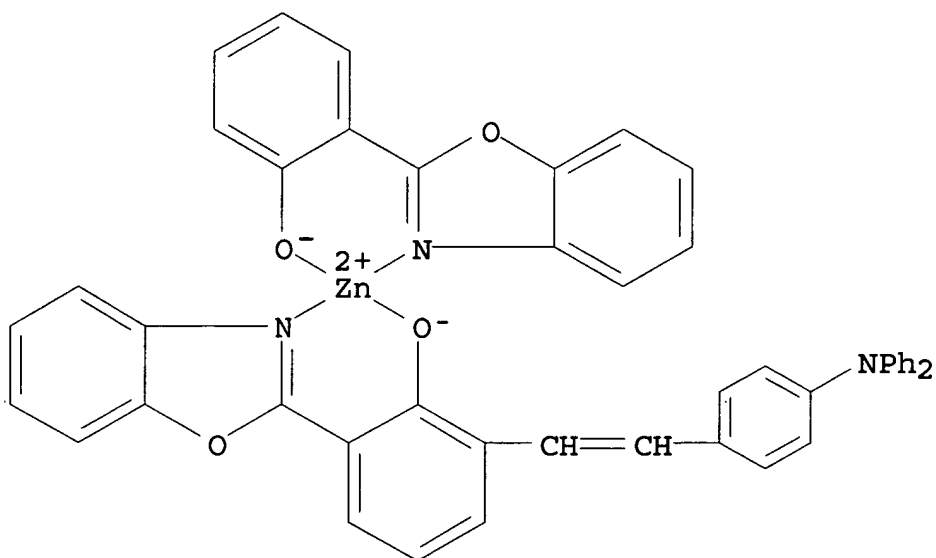
RN 209174-86-7 HCA

CN Zinc, bis[2-(2-benzoxazolyl-.kappa.N3)-6-(2-[1,1'-biphenyl]-4-ylethenyl)phenolato-.kappa.O]-, (T-4) - (9CI) (CA INDEX NAME)



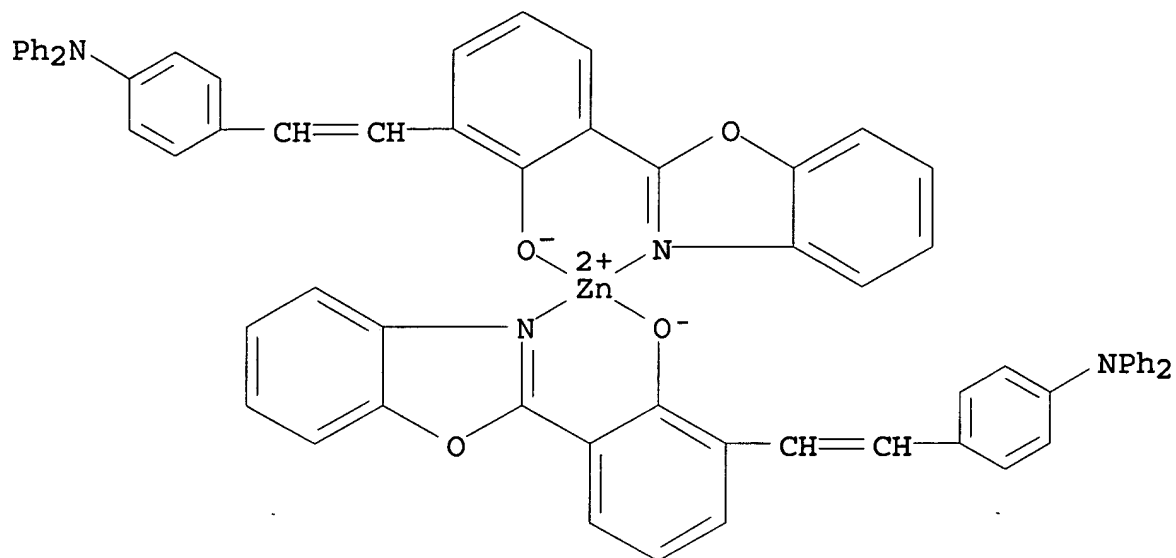
RN 209174-87-8 HCA

CN Zinc, [2-(2-benzoxazolyl-.kappa.N3)-6-[2-[4-(diphenylamino)phenyl]ethenyl]phenolato-.kappa.O] [2-(2-benzoxazolyl-.kappa.N3)phenolato-.kappa.O]-, (T-4) - (9CI) (CA INDEX NAME)



RN 209174-90-3 HCA

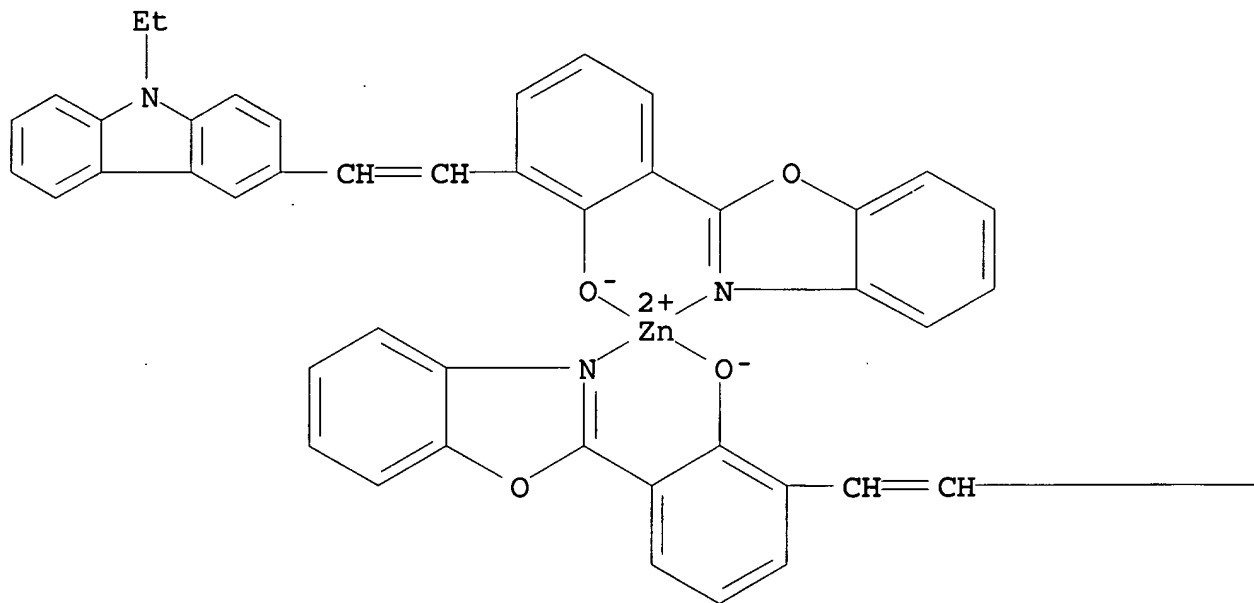
CN Zinc, bis[2-(2-benzoxazolyl-.kappa.N3)-6-[2-[4-(diphenylamino)phenyl]ethenyl]phenolato-.kappa.O]-, (T-4) - (9CI) (CA INDEX NAME)



RN 209174-92-5 HCA

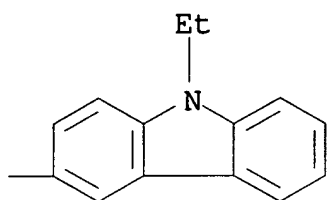
CN Zinc, bis[2-(2-benzoxazolyl-.kappa.N3)-6-[2-(9-ethyl-9H-carbazol-3-yl)ethenyl]phenolato-.kappa.O]-, (T-4)- (9CI) (CA INDEX NAME)

PAGE 1-A



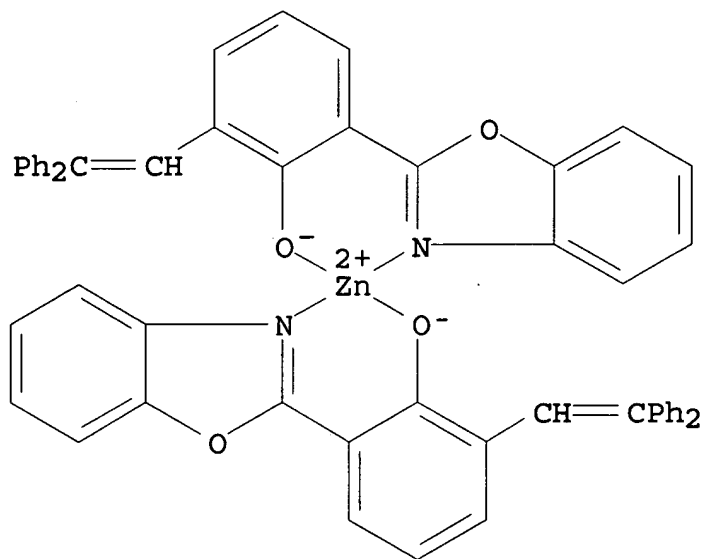


PAGE 1-B



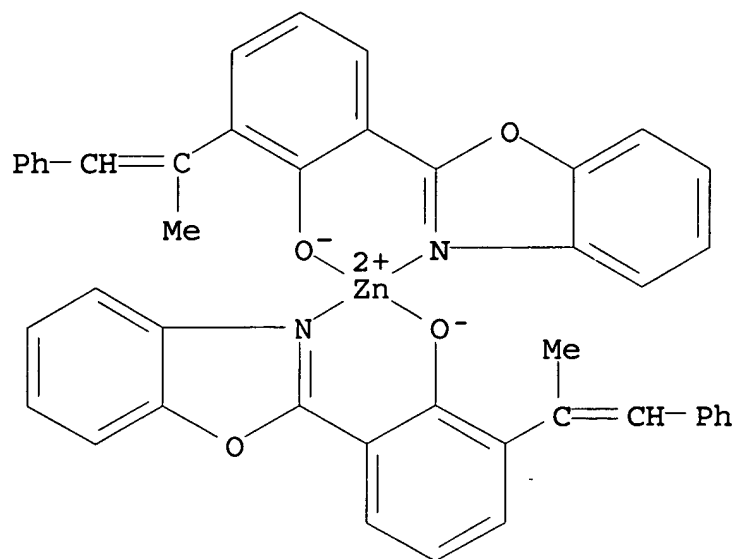
RN 209174-94-7 HCA

CN Zinc, bis[2-(2-benzoxazolyl-.kappa.N3)-6-(2,2-diphenylethenyl)phenolato-.kappa.O]-, (T-4)- (9CI) (CA INDEX NAME)



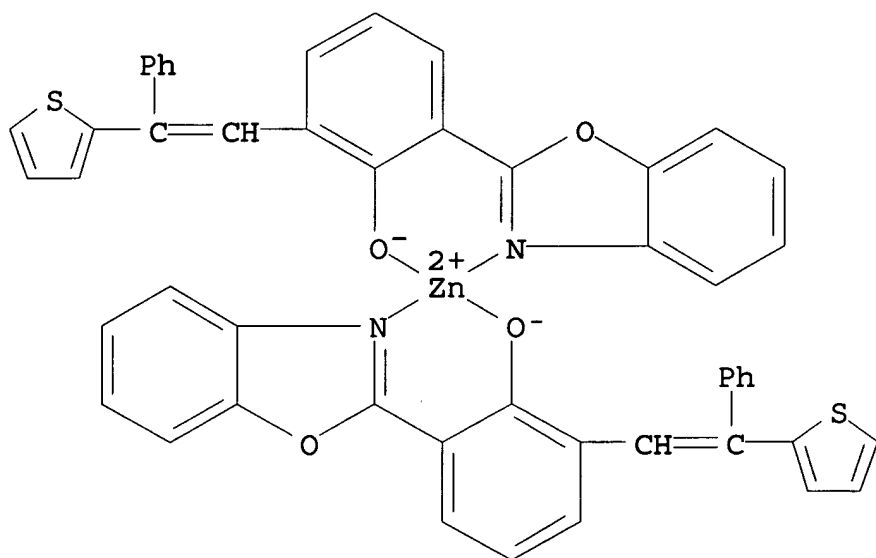
RN 209174-96-9 HCA

CN Zinc, bis[2-(2-benzoxazolyl-.kappa.N3)-6-(1-methyl-2-phenylethenyl)phenolato-.kappa.O]-, (T-4)- (9CI) (CA INDEX NAME)



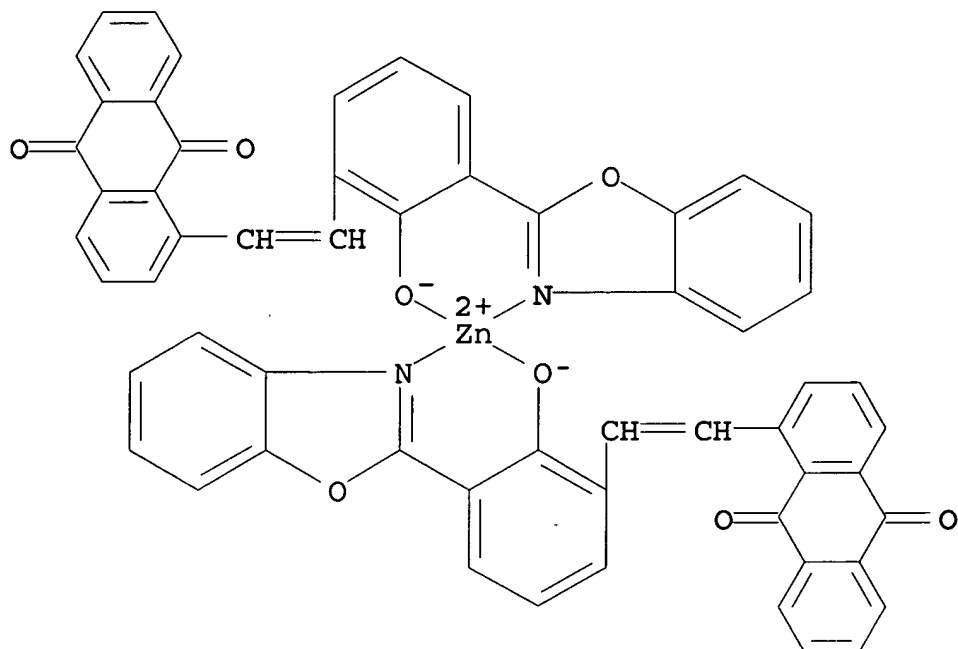
RN 209174-98-1 HCA

CN Zinc, bis[2-(2-benzoxazolyl-.kappa.N3)-6-[2-phenyl-2-(2-thienyl)ethenyl]phenolato-.kappa.O]-, (T-4)- (9CI) (CA INDEX NAME)



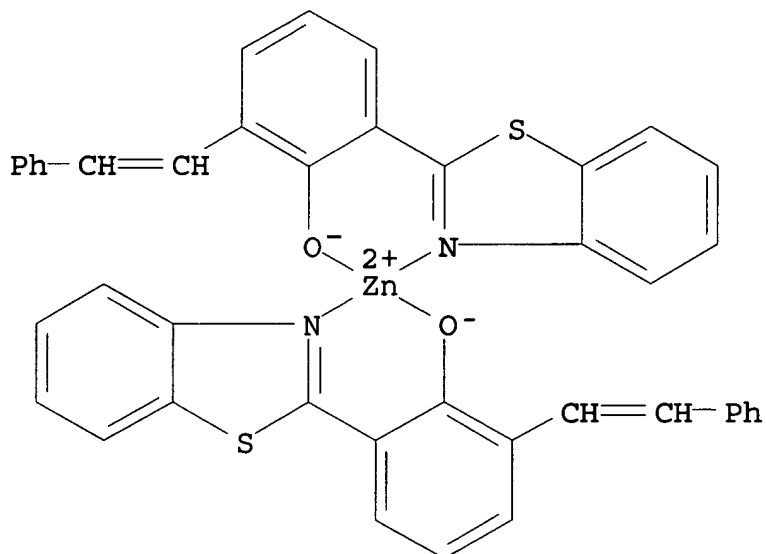
RN 209175-01-9 HCA

CN Zinc, bis[1-[2-[3-(2-benzoxazolyl-.kappa.N3)-2-(hydroxy-.kappa.O)phenyl]ethenyl]-9,10-anthracenedionato]-, (T-4)- (9CI) (CA INDEX NAME)



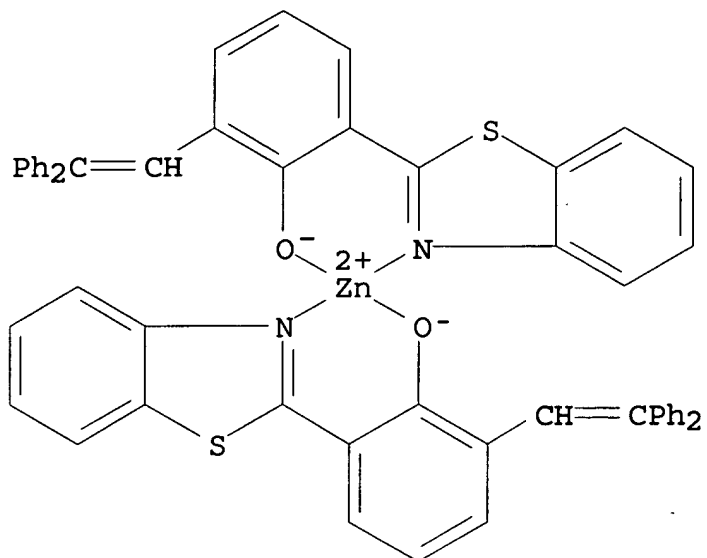
RN 209175-03-1 HCA

CN Zinc, bis[2-(2-benzothiazolyl-.kappa.N3)-6-(2-phenylethenyl)phenolato-.kappa.O]-, (T-4) - (9CI) (CA INDEX NAME)



RN 209175-05-3 HCA

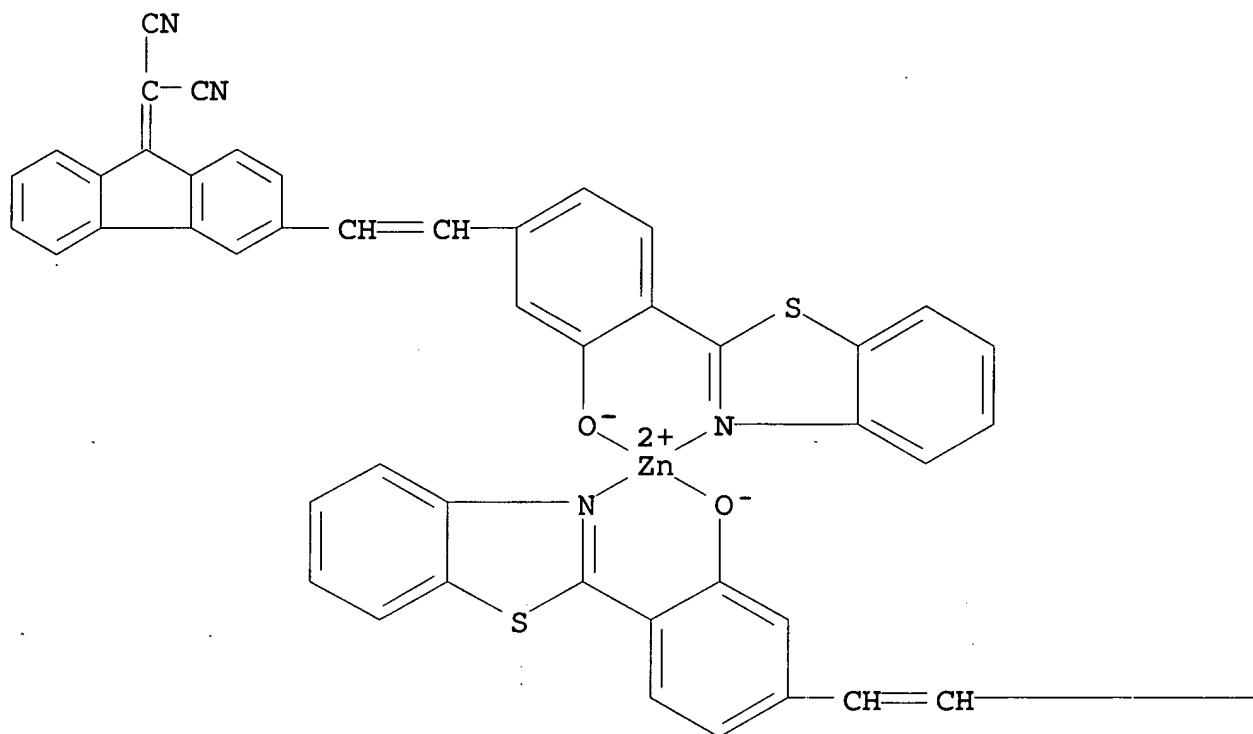
CN Zinc, bis[2-(2-benzothiazolyl-.kappa.N3)-6-(2,2-diphenylethenyl)phenolato-.kappa.O]-, (T-4) - (9CI) (CA INDEX NAME)



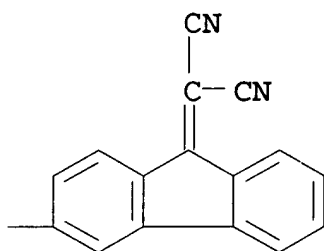
RN 209175-07-5 HCA

CN Zinc, bis[[3-[2-[4-(2-benzothiazolyl-.kappa.N3)-3-(hydroxy-.kappa.O)phenyl]ethenyl]-9H-fluoren-9-ylidene]propanedinitrilato]-, (T-4)- (9CI) (CA INDEX NAME)

PAGE 1-A

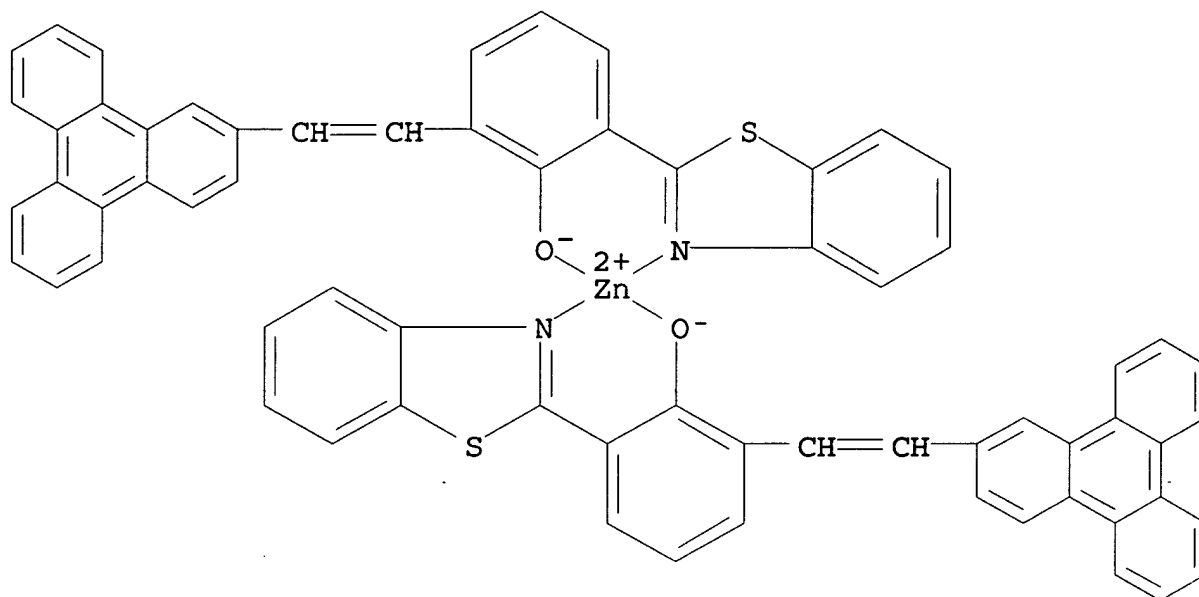


PAGE 1-B



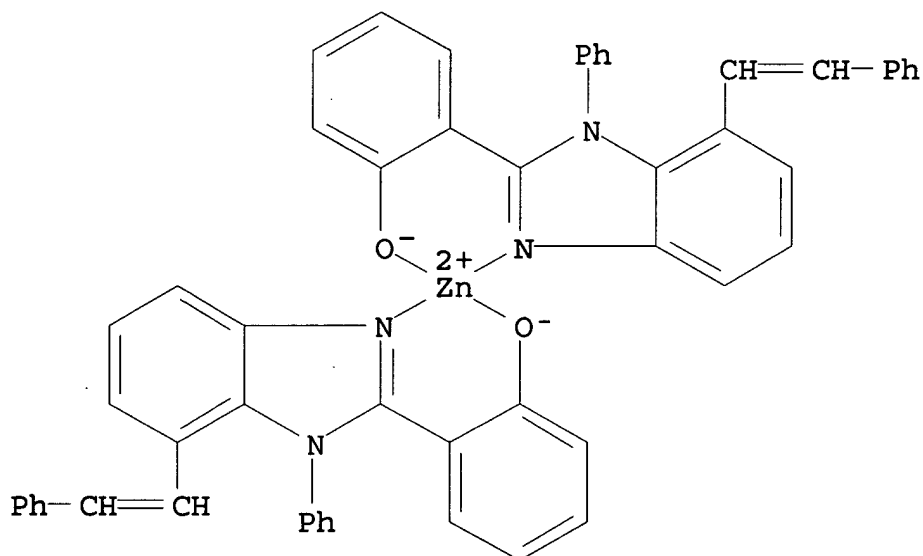
RN 209175-09-7 HCA

CN Zinc, bis[2-(2-benzothiazolyl-.kappa.N3)-6-[2-(2-triphenylenyl)ethenyl]phenolato-.kappa.O]-, (T-4)- (9CI). (CA INDEX NAME)



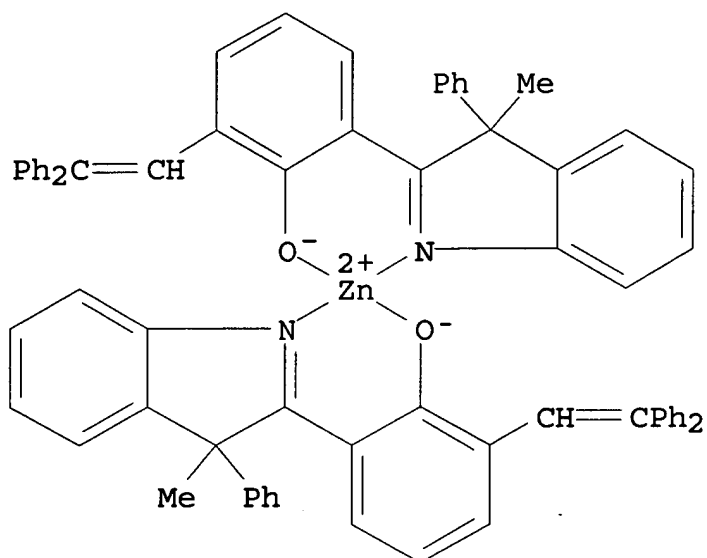
RN 209175-12-2 HCA

CN Zinc, bis[2-[1-phenyl-7-(2-phenylethenyl)-1H-benzimidazol-2-yl-.kappa.N3]phenolato-.kappa.O]-, (T-4)- (9CI) (CA INDEX NAME)



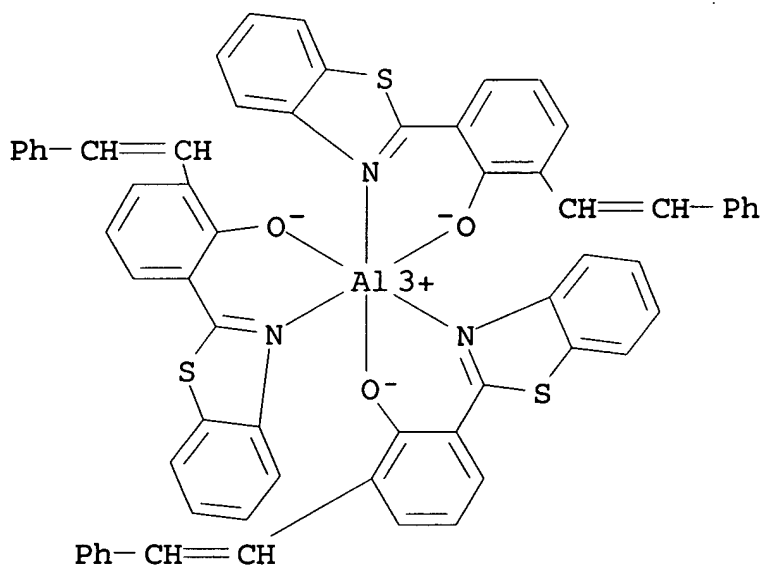
RN 209175-13-3 HCA

CN Zinc, bis[2-(2,2-diphenylethenyl)-6-(3-methyl-3-phenyl-3H-indol-2-yl-.kappa.N)phenolato-.kappa.O]-, (T-4)- (9CI) (CA INDEX NAME)



RN 209175-16-6 HCA

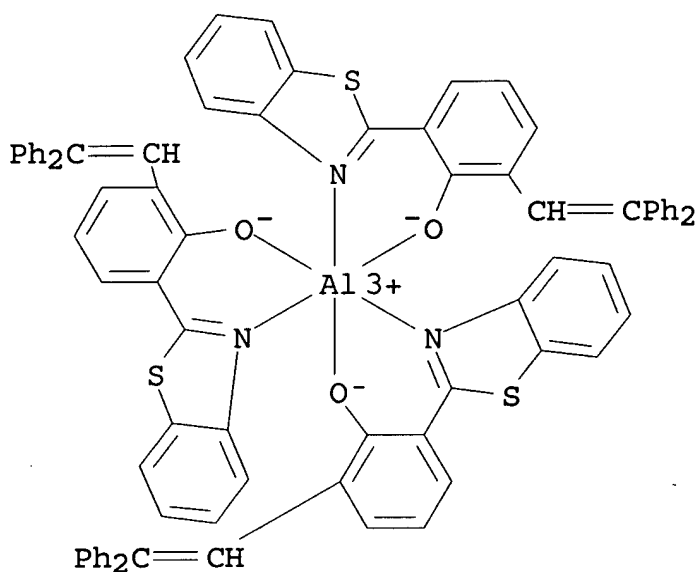
CN Aluminum, tris[2-(2-benzothiazolyl-.kappa.N3)-6-(2-phenylethenyl)phenolato-.kappa.O]- (9CI) (CA INDEX NAME)



RN 209175-19-9 HCA

CN Aluminum, tris[2-(2-benzothiazolyl-.kappa.N3)-6-(2,2-diphenylethenyl)phenolato-.kappa.O]- (9CI) (CA INDEX NAME)



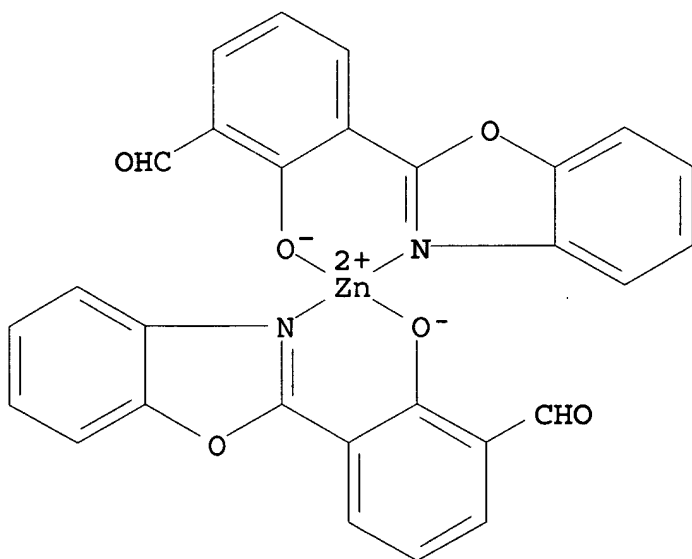


IT 209175-27-9

(org. **electroluminescent** device contg. arom. compd.  
metal complex electron-injecting substance)

RN 209175-27-9 HCA

CN Zinc, bis[3-(2-benzoxazolyl-.kappa.N3)-2-(hydroxy-  
.kappa.O)benzaldehydato]-, (T-4)- (9CI) (CA INDEX NAME)



IC ICM C09K011-06

CC 73-12 (Optical, Electron, and Mass Spectroscopy and Other Related

Properties)

Section cross-reference(s): 74

ST **electroluminescent** device metal complex electron donator

IT **Electroluminescent** devices

(org. **electroluminescent** device contg. arom. compd.  
metal complex electron-injecting substance)

IT 209175-25-7P

(org. **electroluminescent** device contg. arom. compd.  
metal complex electron-injecting substance)

IT 209174-83-4 209174-85-6 209174-86-7

209174-87-8 209174-90-3 209174-92-5

209174-94-7 209174-96-9 209174-98-1

209175-01-9 209175-03-1 209175-05-3

209175-07-5 209175-09-7 209175-12-2

209175-13-3 209175-14-4 209175-15-5 209175-16-6

209175-17-7 209175-18-8 209175-19-9 209175-20-2

209175-22-4 209175-23-5 209175-24-6

(org. **electroluminescent** device contg. arom. compd.  
metal complex electron-injecting substance)

IT 557-34-6, Zinc acetate 36103-43-2 209175-26-8

209175-27-9

(org. **electroluminescent** device contg. arom. compd.  
metal complex electron-injecting substance)

L42 ANSWER 18 OF 23 HCA COPYRIGHT 2005 ACS on STN

129:47223 Blue luminescent materials for organic

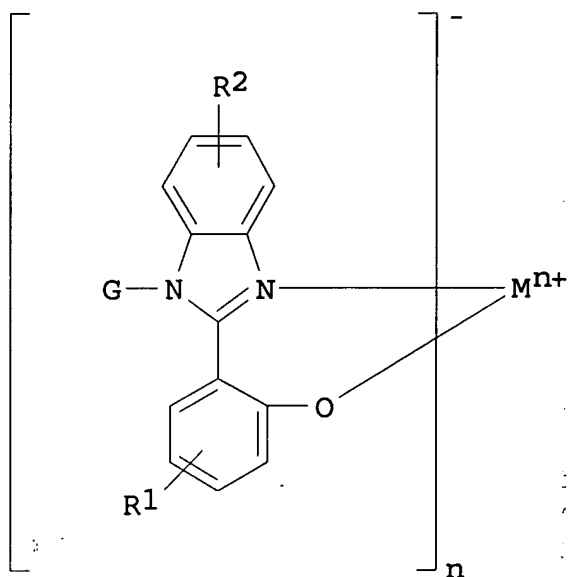
**electroluminescent** devices. Shi, Jianmin; Chen, Chin H.;

Klubek, Kevin P. (Eastman Kodak Co., USA). U.S. US 5755999 A

19980526, 25 pp. (English). CODEN: USXXAM. APPLICATION:

US 1997-857747 19970516.

GI



AB Luminescent materials are described by the general formula I ( $n = 2$  or  $3$ ;  $M$  = a divalent or trivalent metal;  $G$  = (un)substituted aryl or (un)substituted heteroaryl, both the aryl and the heteroaryls 6-24 C atoms, wherein the substituted aryl or heteroaryl = alkyl, haloalkyl with 1-8 C atoms, alkoxy or haloalkoxy group with 1-18 C atoms, halo, cyano, amino, amido, SO, CO, aryl, or heteroaryl; and  $R_1$  and  $R_2$  = individually H, alkyl or haloalkyl with 1-18 C atoms, halo, cyano, amino, amido, SO, CO, and 5-24 atoms necessary to complete a fused arom. ring).

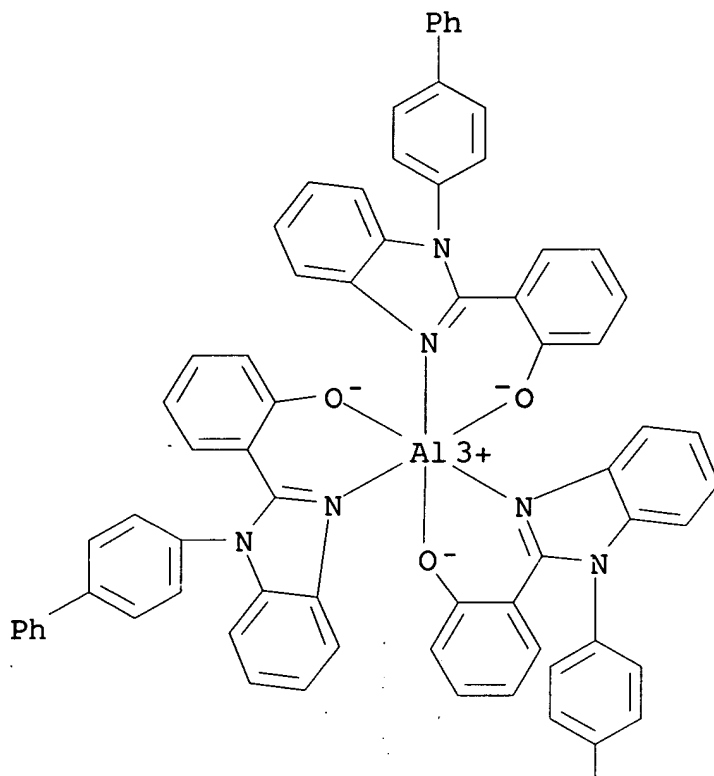
IT 208187-68-2P 208187-75-1P 208187-79-5P

(organometallic blue luminescent materials for  
electroluminescent devices)

RN 208187-68-2 HCA

CN Aluminum, tris[2-(1-[1,1'-biphenyl]-4-yl-1H-benzimidazol-2-yl-  
.kappa.N3)phenolato-.kappa.O] - (9CI) (CA INDEX NAME)

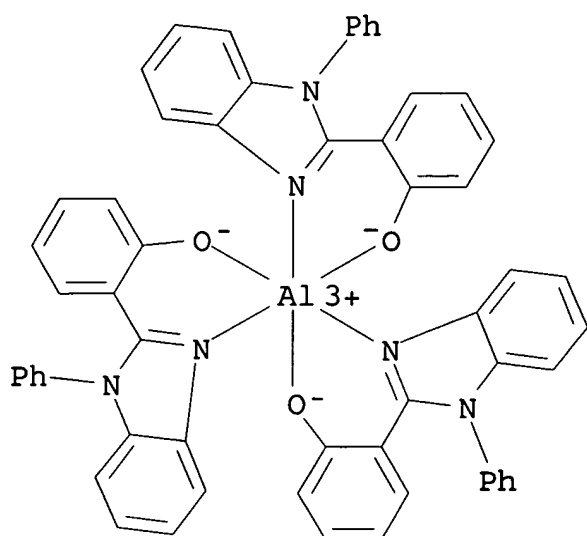
PAGE 1-A



PAGE 2-A

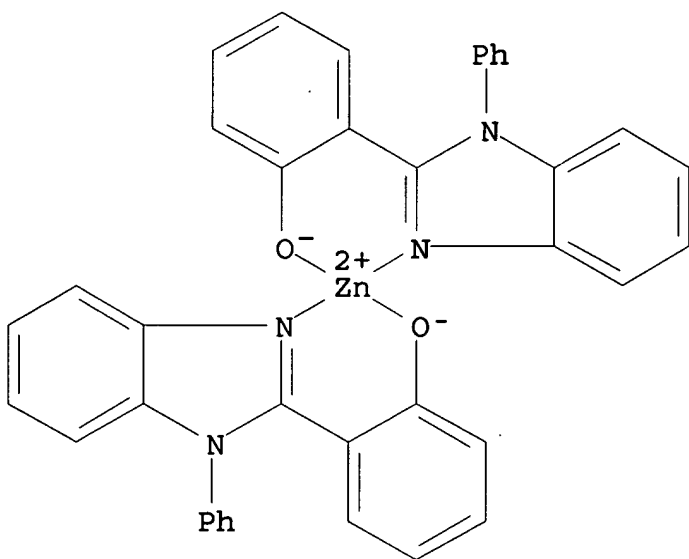


RN 208187-75-1 HCA  
CN Aluminum, tris[2-(1-phenyl-1H-benzimidazol-2-yl-.kappa.N3)phenolato-.kappa.O]- (9CI) (CA INDEX NAME)



RN 208187-79-5 HCA

CN Zinc, bis[2-(1-phenyl-1H-benzimidazol-2-yl-.kappa.N3)phenolato-.kappa.O]-, (T-4) - (9CI) (CA INDEX NAME)



IC ICM C09K011-06

ICS C07F005-06

INCL 252301160

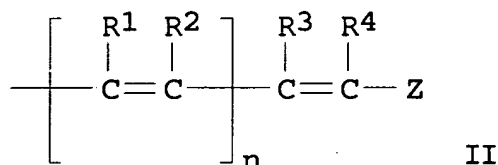
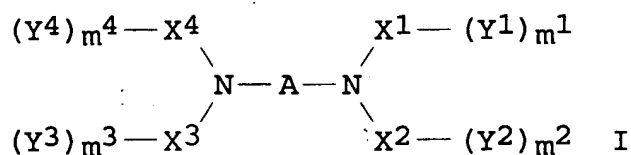
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 29, 76

- ST **electroluminescent** material aryl benzimidazolyl phenol complex; blue **electroluminescent** aryl benzimidazolyl phenol complex
- IT Phosphors  
(**electroluminescent**, blue; organometallic blue luminescent materials for **electroluminescent** devices)
- IT **Electroluminescent** devices  
(organometallic blue luminescent materials for **electroluminescent** devices)
- IT 147-14-8, Copper phthalocyanine 2085-33-8, Tris(8-hydroxyquinolinato)aluminum 7439-97-6D, Mercury, compds. with o-(N-aryl-2-benzimidazolyl)phenol compds., uses 7440-05-3D, Palladium, compds. with o-(N-aryl-2-benzimidazolyl)phenol compds., uses 7440-24-6D, Strontium, compds. with o-(N-aryl-2-benzimidazolyl)phenol compds., uses 7440-28-0D, Thallium, compds. with o-(N-aryl-2-benzimidazolyl)phenol compds., uses 7440-39-3D, Barium, compds. with o-(N-aryl-2-benzimidazolyl)phenol compds., uses 7440-43-9D, Cadmium, compds. with o-(N-aryl-2-benzimidazolyl)phenol compds., uses 7440-55-3D, Gallium, compds. with o-(N-aryl-2-benzimidazolyl)phenol compds., uses 7440-70-2D, Calcium, compds. with o-(N-aryl-2-benzimidazolyl)phenol compds., uses 7440-74-6D, Indium, compds. with o-(N-aryl-2-benzimidazolyl)phenol compds., uses 50926-11-9, Indium-tin-oxide 117665-21-1 123847-85-8  
(organometallic blue luminescent materials for **electroluminescent** devices)
- IT 208187-68-2P 208187-75-1P 208187-77-3P  
208187-79-5P 208187-81-9P 208187-84-2P  
(organometallic blue luminescent materials for **electroluminescent** devices)
- IT 2406-74-8P  
(organometallic blue luminescent materials for **electroluminescent** devices)
- IT 88-73-3, 1-Chloro-2-nitrobenzene 92-67-1, 4-Aminobiphenyl 142-71-2, Copper acetate 142-72-3, Magnesium acetate 144-55-8, Sodium bicarbonate, reactions 534-85-0, N-Phenyl-1,2-phenylenediamine 555-31-7, Aluminum isopropoxide 557-34-6, Zinc acetate 13510-49-1, Beryllium sulfate 21615-34-9, o-Anisoyl chloride  
(organometallic blue luminescent materials for **electroluminescent** devices)
- IT 94212-05-2P 175712-79-5P 208187-62-6P 208187-64-8P  
208187-66-0P 208187-71-7P  
(organometallic blue luminescent materials for **electroluminescent** devices)

Enokida, Toshio; Tamano, Michiko (Toyo Ink Mfg. Co., Ltd., Japan).  
 Jpn. Kokai Tokkyo Koho JP 09268284 A2 19971014 Heisei, 33  
 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1996-78501  
 19960401.

GI



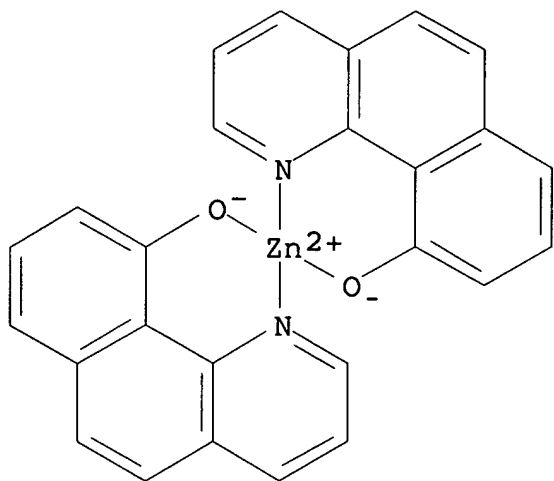
AB The elements comprise the phosphors I contg. II; I [A, X1-4 = C2-20 arylene; m1, m2, m3, m4 = 0-2; Y1-4 = II] II [R1-4 = H, (un)substituted alkyl, (un)substituted aryl, CN; Z = (un)substituted aryl; n = 0, 1]; a tertiary amine deriv. (B1,2N)G(NB3,4) formed between the phosphor and the anode [B1-4 = (un)substituted C6-20 aryl; G = (un)substituted arylene]; and a metal complex Q1,2GaL formed between the phosphor and the cathode [Q1,2 = (un)substituted hydrobenzoquinoline deriv.; L = halo, (un)substituted (cyclo)alkyl, aryl cong. optional (un)substituted N, OR (R .ident. L)].

IT 164259-44-3 198903-63-8

(org. electroluminescent device elements)

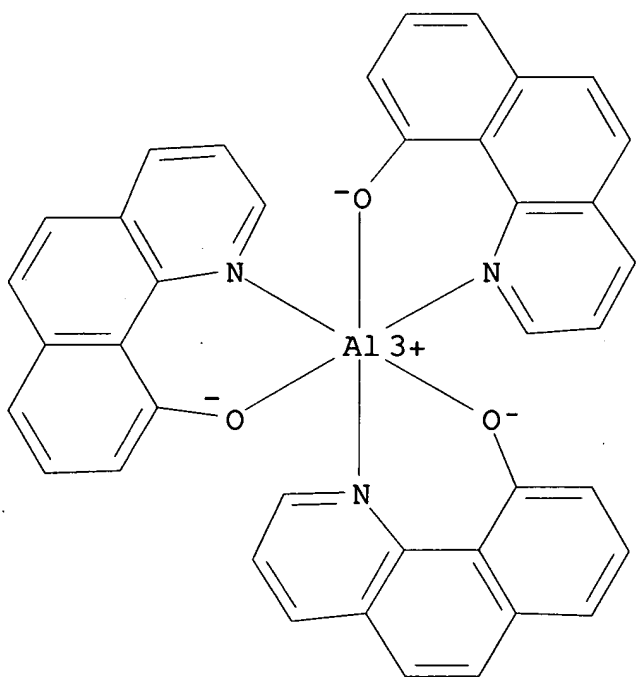
RN 164259-44-3 HCA

CN Zinc, bis(benzo[h]quinolin-10-olato-.kappa.N1,.kappa.O10)-, (T-4)-(9CI) (CA INDEX NAME)



RN 198903-63-8 HCA

CN Aluminum, tris(benzo[h]quinolin-10-olato-.kappa.N1,.kappa.O10) -  
(9CI) (CA INDEX NAME)



IC ICM C09K011-06

ICS H05B033-14

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related  
Properties)

ST electroluminescent org phosphor



IT Phosphors  
(**electroluminescent**; org. **electroluminescent**  
device elements)

IT **Electroluminescent** devices  
(org. **electroluminescent** device elements)

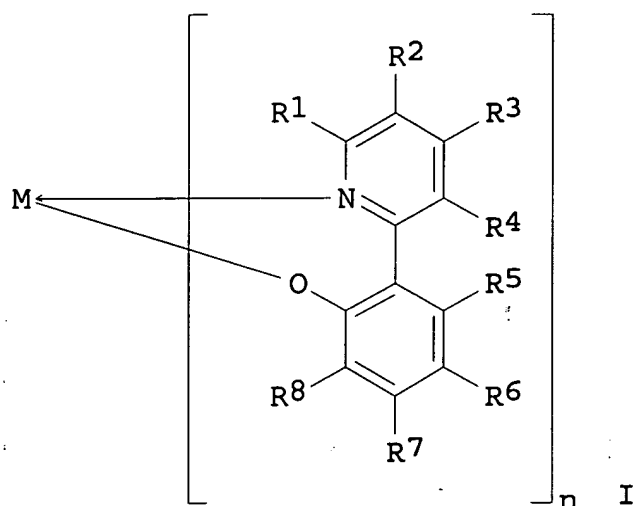
IT Metallophthalocyanines  
Polycarbonates, uses  
(org. **electroluminescent** device elements)

IT 517-51-1 905-62-4 980-26-7 1047-16-1 1499-10-1 2085-33-8  
7520-01-6 13978-85-3 14642-34-3 15082-28-7 38215-36-0  
51325-91-8 58361-82-3 58473-78-2 61843-06-9 65181-78-4  
73276-70-7 99762-78-4 123847-85-8 139255-17-7 143010-15-5  
146162-54-1 146162-63-2 150405-69-9 151026-65-2  
**164259-44-3** 166444-98-0 185505-35-5 186965-89-9  
188049-36-7 188049-37-8 188049-39-0 188049-41-4 189263-95-4  
198903-35-4 198903-36-5 198903-37-6 198903-38-7 198903-39-8  
198903-40-1 198903-41-2 198903-42-3 198903-43-4 198903-44-5  
198903-45-6 198903-46-7 198903-47-8 198903-48-9 198903-49-0  
198903-50-3 198903-51-4 198903-52-5 198903-53-6 198903-54-7  
198903-55-8 198903-56-9 198903-57-0 198903-58-1 198903-59-2  
198903-60-5 198903-61-6 198903-62-7 **198903-63-8**  
198903-64-9  
(org. **electroluminescent** device elements)

L42 ANSWER 20 OF 23 HCA COPYRIGHT 2005 ACS on STN

127:168833 Material for organic **electroluminescent** device.  
Enokida, Toshio; Okutsu, Satoshi; Tamano, Michiko (Toyo Ink Mfg.  
Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 09176629 A2  
**19970708** Heisei, 16 pp. (Japanese). CODEN: JKXXAF.  
APPLICATION: JP 1995-336240 19951225.

GI



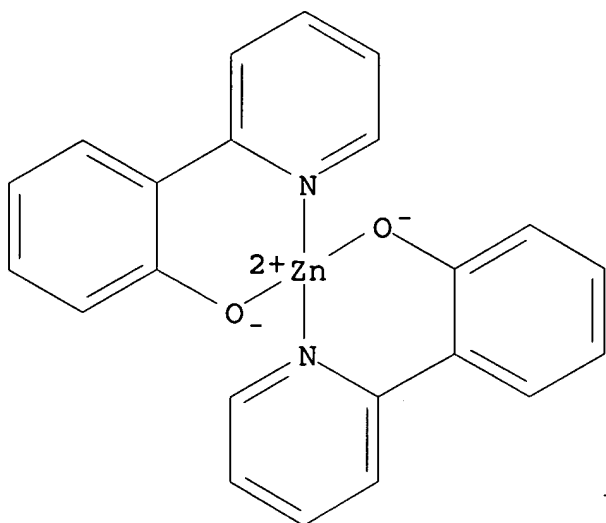
AB The invention relates to a material used for an org. **electroluminescent** device, wherein the **light-emitting** layer contains the compd. represented by I [ R1-8 = H, halo, alkyl, alkoxy, aryl etc.; R1-4 and R5-8 may form a N-contg. arom. ring with neighboring groups; M = di or tri valent metal; n = 2 or 3].

IT 193622-08-1 193622-09-2 193622-10-5  
 193622-11-6 193622-12-7 193622-13-8  
 193622-14-9 193622-15-0 193622-16-1  
 193622-17-2 193622-18-3 193622-19-4  
 193622-20-7 193622-21-8 193622-22-9  
 193622-23-0 193622-33-2 193622-34-3  
 193622-35-4 193622-38-7 193622-39-8  
 193622-40-1 193622-41-2 193622-42-3  
 193622-43-4

(material for org. **electroluminescent** device)

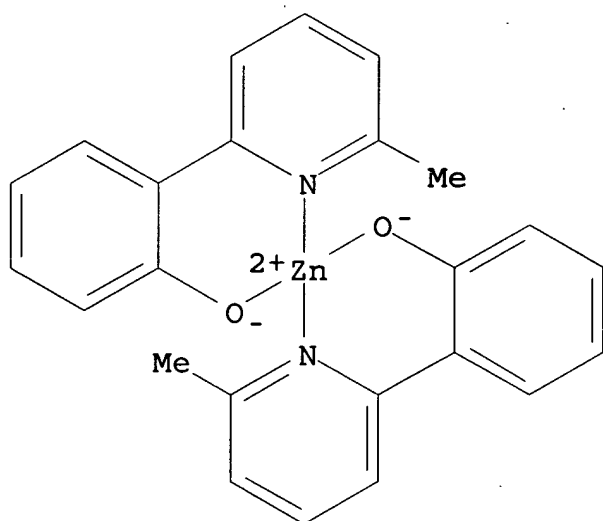
RN 193622-08-1 HCA

CN Zinc, bis[2-(2-pyridinyl-.kappa.N)phenolato-.kappa.O]-, (T-4) - (9CI)  
 (CA INDEX NAME)



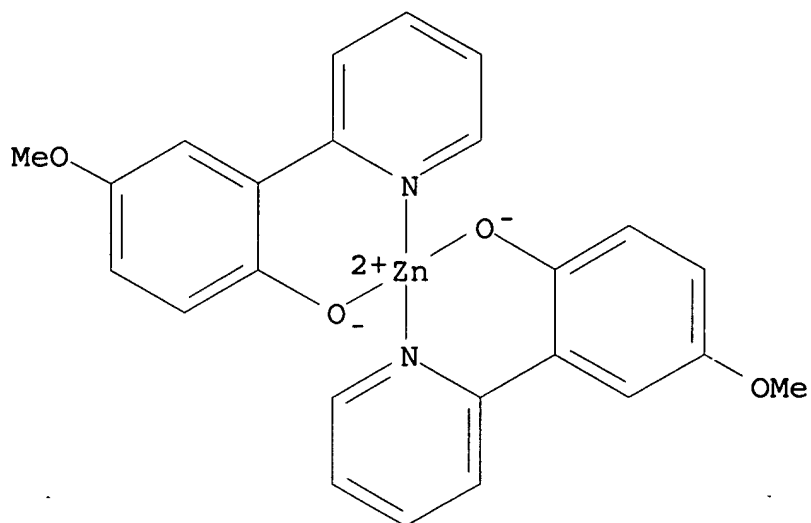
RN 193622-09-2 HCA

CN Zinc, bis[2-(6-methyl-2-pyridinyl-.kappa.N)phenolato-.kappa.O]-,  
(T-4) - (9CI) (CA INDEX NAME)



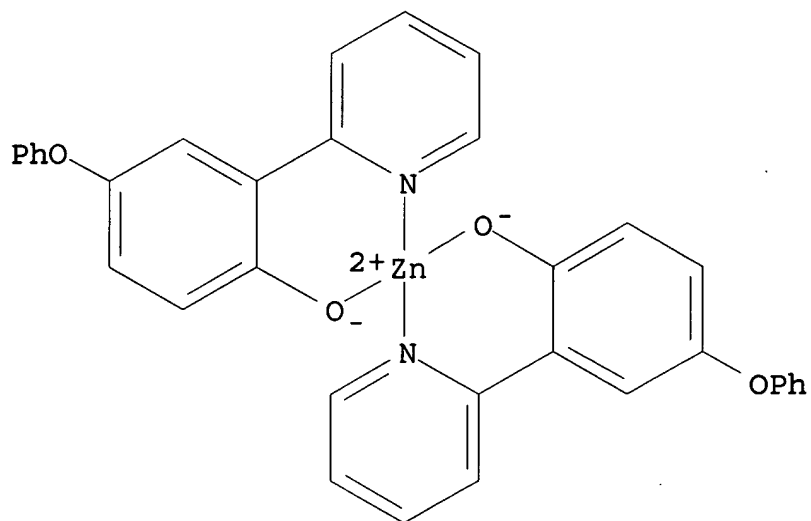
RN 193622-10-5 HCA

CN Zinc, bis[4-methoxy-2-(2-pyridinyl-.kappa.N)phenolato-.kappa.O]-,  
(T-4) - (9CI) (CA INDEX NAME)



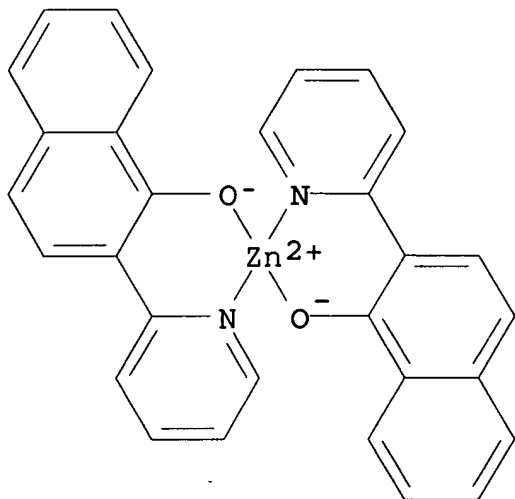
RN 193622-11-6 HCA

CN Zinc, bis[4-phenoxy-2-(2-pyridinyl-.kappa.N)phenolato-.kappa.O] -,  
(T-4) - (9CI) (CA INDEX NAME)



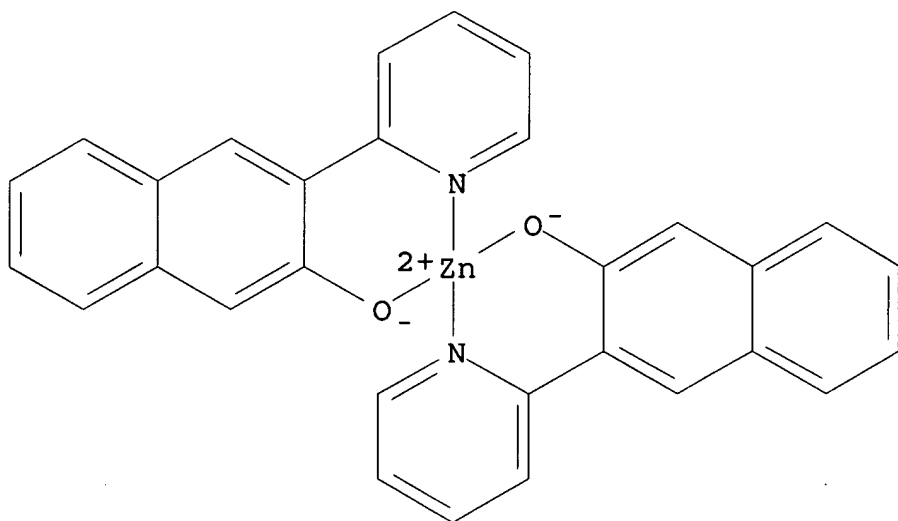
RN 193622-12-7 HCA

CN Zinc, bis[2-(2-pyridinyl-.kappa.N)-1-naphthalenolato-.kappa.O] -,  
(T-4) - (9CI) (CA INDEX NAME)



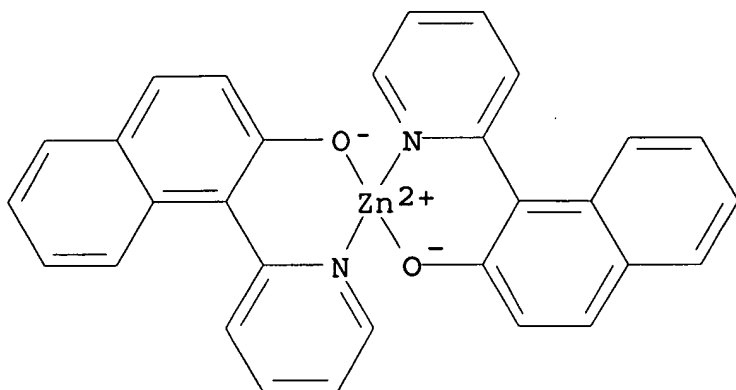
RN 193622-13-8 HCA

CN Zinc, bis[3-(2-pyridinyl-.kappa.N)-2-naphthalenolato-.kappa.O]-,  
(T-4)- (9CI) (CA INDEX NAME)

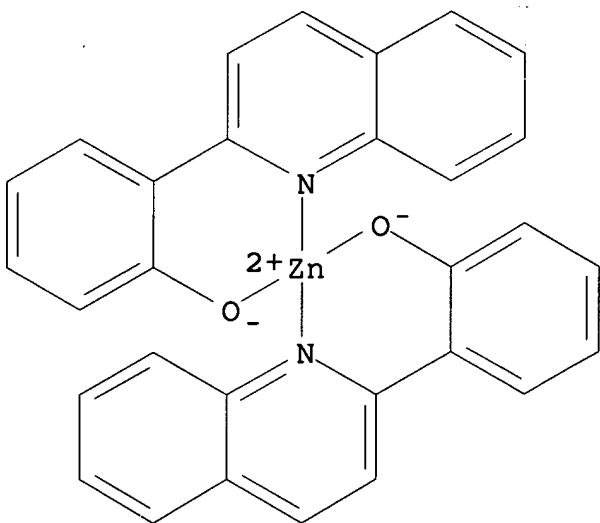


RN 193622-14-9 HCA

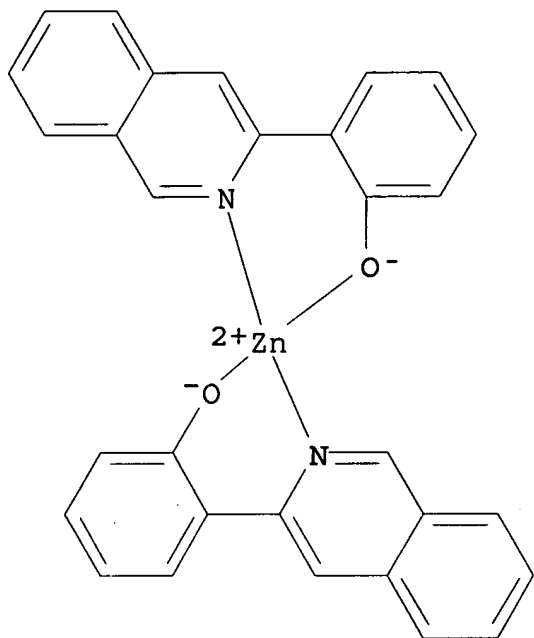
CN Zinc, bis[1-(2-pyridinyl-.kappa.N)-2-naphthalenolato-.kappa.O]-,  
(T-4)- (9CI) (CA INDEX NAME)



RN 193622-15-0 HCA  
CN Zinc, bis[2-(2-quinolinyl-.kappa.N)phenolato-.kappa.O]-, (T-4)-  
(9CI) (CA INDEX NAME)

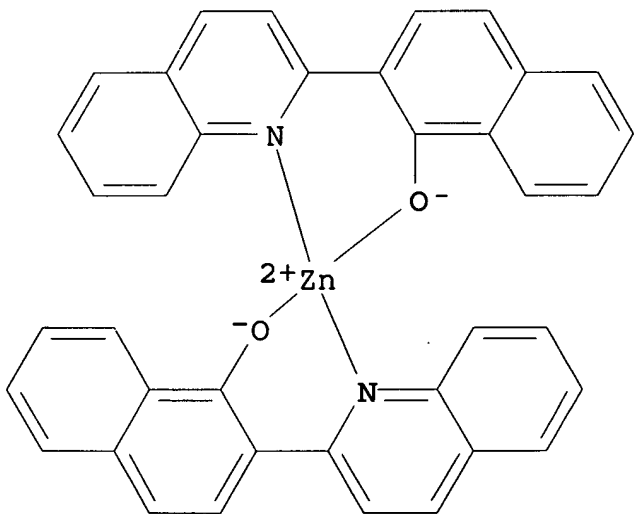


RN 193622-16-1 HCA  
CN Zinc, bis[2-(3-isoquinolinyl-.kappa.N)phenolato-.kappa.O]-, (T-4)-  
(9CI) (CA INDEX NAME)



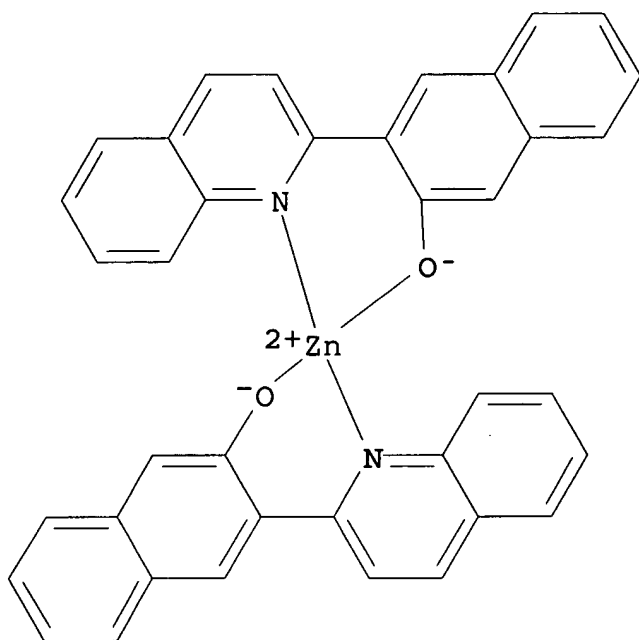
RN 193622-17-2 HCA

CN Zinc, bis[2-(2-quinolinyl-.kappa.N)-1-naphthalenolato-.kappa.O]-,  
(T-4) - (9CI) (CA INDEX NAME)



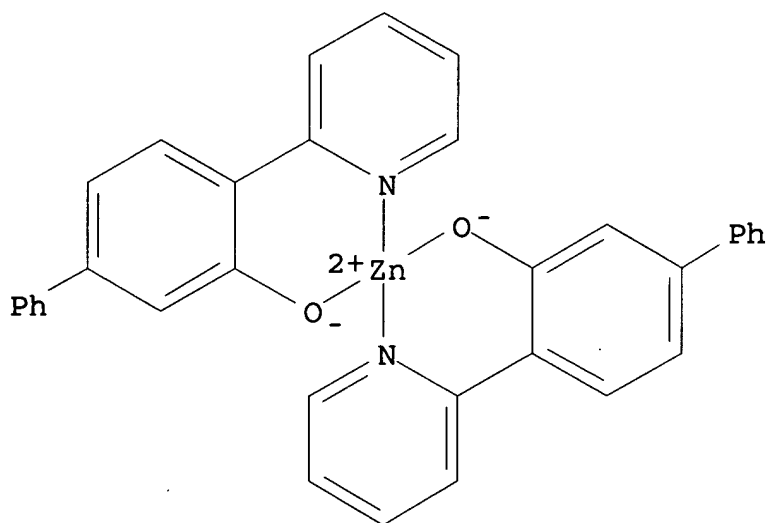
RN 193622-18-3 HCA

CN Zinc, bis[3-(2-quinolinyl-.kappa.N)-2-naphthalenolato-.kappa.O]-,  
(T-4) - (9CI) (CA INDEX NAME)



RN 193622-19-4 HCA

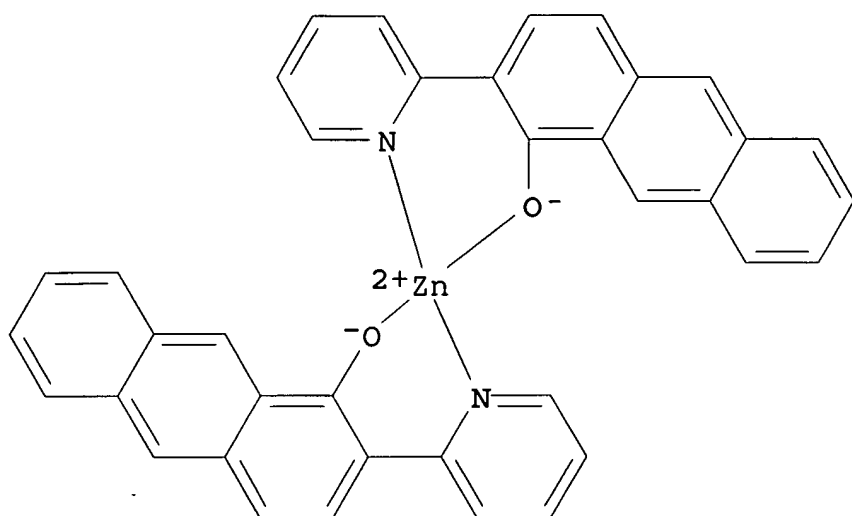
CN Zinc, bis[4-(2-pyridinyl-.kappa.N) [1,1'-biphenyl]-3-olato-.kappa.O] -  
, (T-4) - (9CI) (CA INDEX NAME)



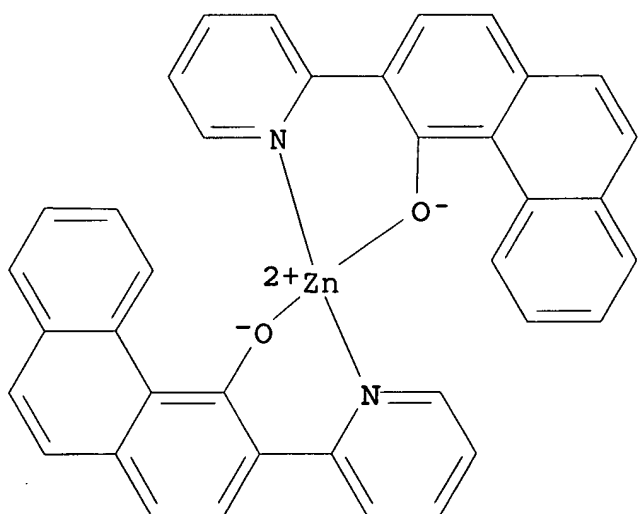
RN 193622-20-7 HCA

CN Zinc, bis[2-(2-pyridinyl-.kappa.N) -1-anthracenolato-.kappa.O] - ,  
(T-4) - (9CI) (CA INDEX NAME)

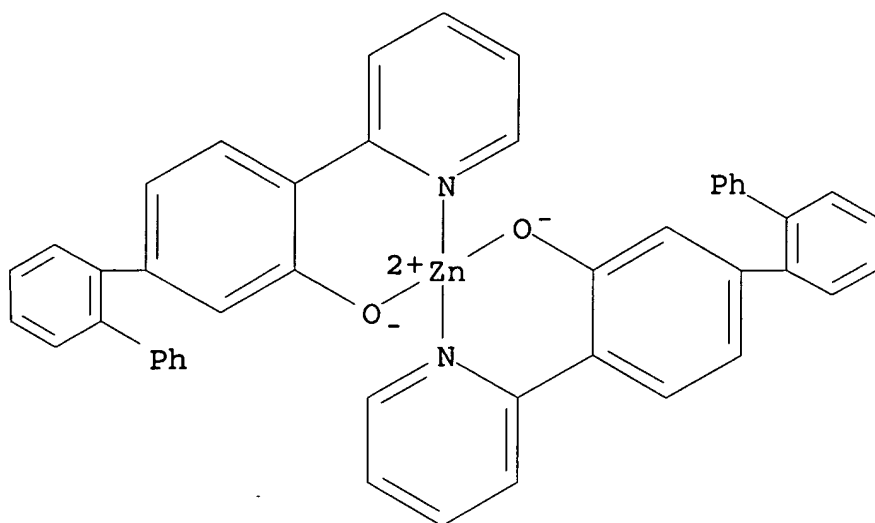




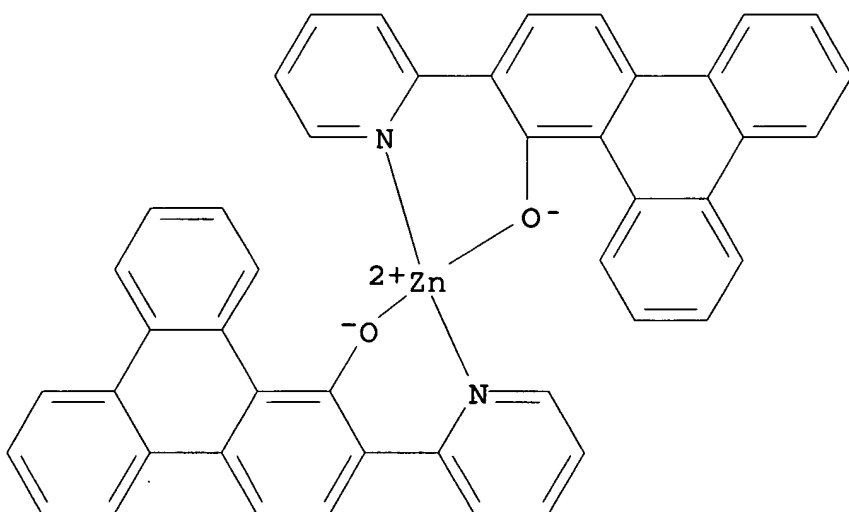
RN 193622-21-8 HCA  
 CN Zinc, bis[3-(2-pyridinyl-.kappa.N)-4-phenanthrenolato-.kappa.O]-,  
 (T-4)- (9CI) (CA INDEX NAME)



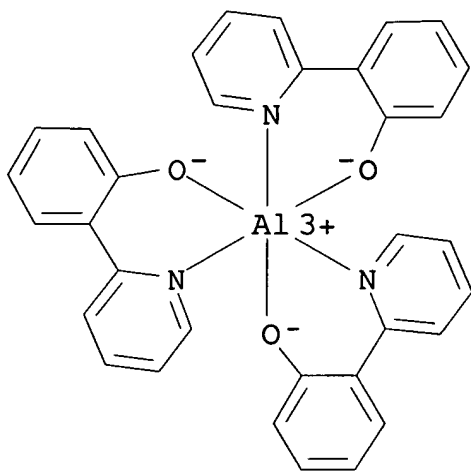
RN 193622-22-9 HCA  
 CN Zinc, bis[4-(2-pyridinyl-.kappa.N)[1,1':2',1''-terphenyl]-3-olato-.kappa.O]-,  
 (T-4)- (9CI) (CA INDEX NAME)



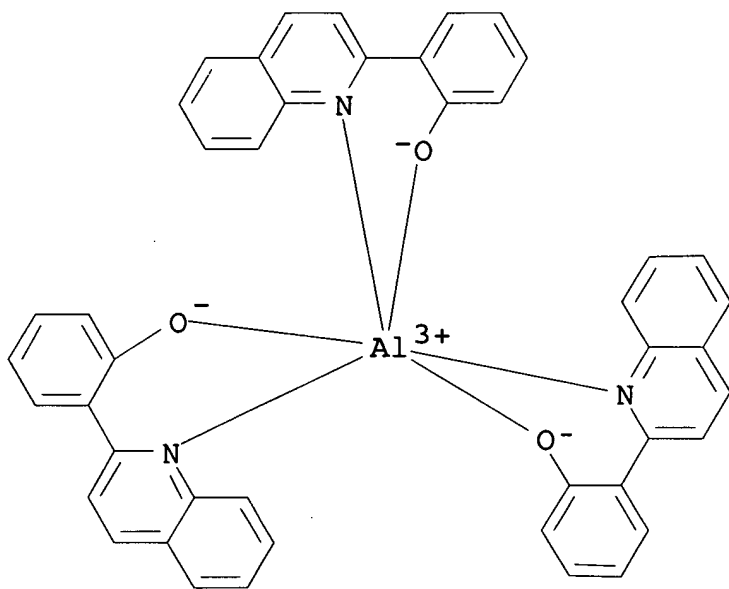
RN 193622-23-0 HCA  
 CN Zinc, bis[2-(2-pyridinyl-.kappa.N)-1-triphenylenolato-.kappa.O]-,  
 (T-4)- (9CI) (CA INDEX NAME)



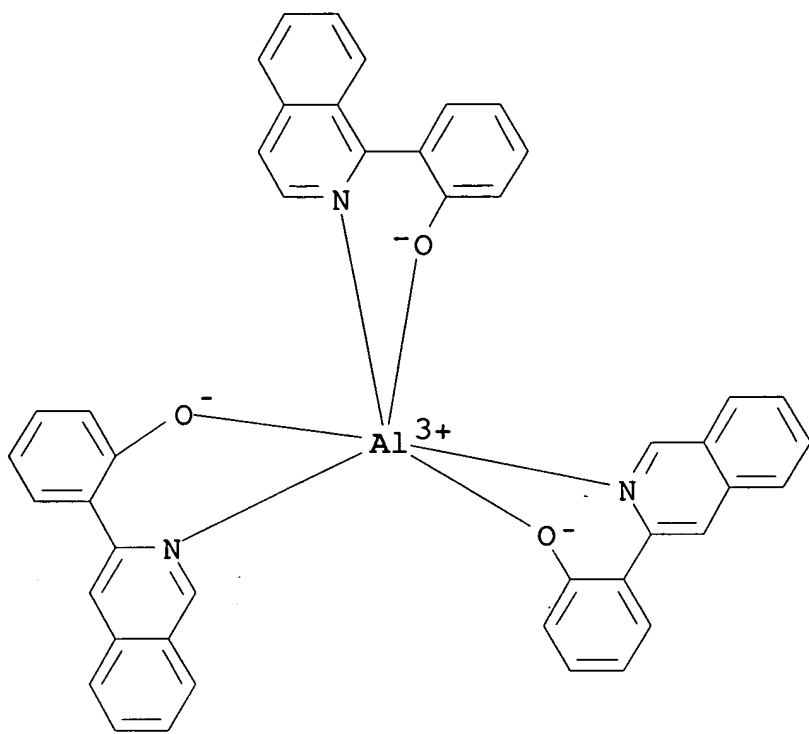
RN 193622-33-2 HCA  
 CN Aluminum, tris[2-(2-pyridinyl-.kappa.N)phenolato-.kappa.O]- (9CI)  
 (CA INDEX NAME)



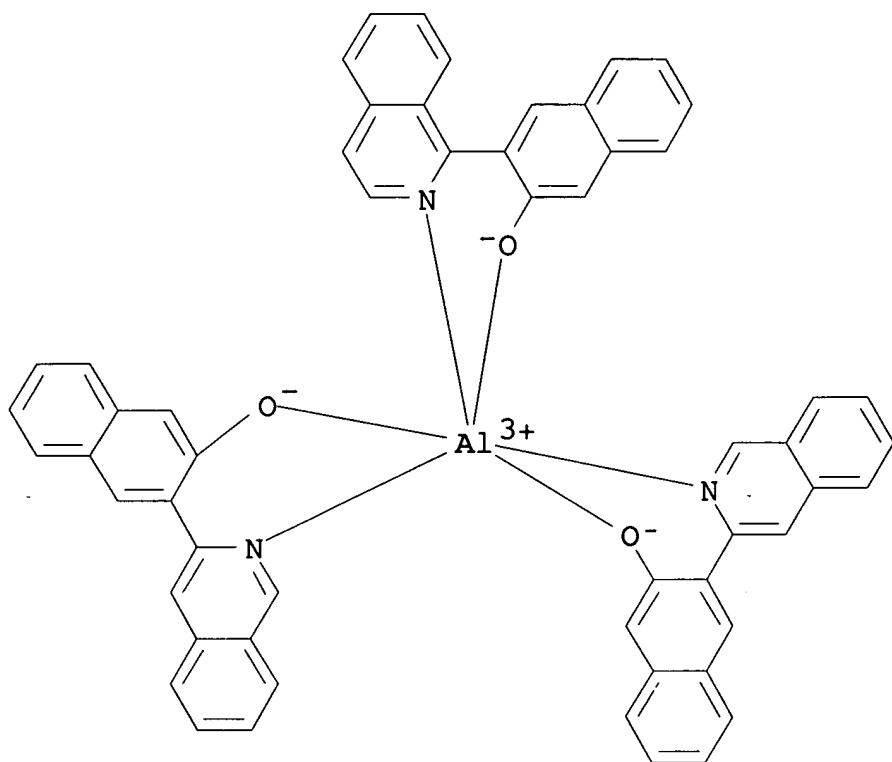
RN 193622-34-3 HCA  
 CN Aluminum, tris[2-(2-quinolinyl-.kappa.N)phenolato-.kappa.O] - (9CI)  
 (CA INDEX NAME)



RN 193622-35-4 HCA  
 CN Aluminum, [2-(1-isoquinolinyl-.kappa.N)phenolato-.kappa.O]bis[2-(3-isoquinolinyl-.kappa.N)phenolato-.kappa.O] - (9CI) (CA INDEX NAME)

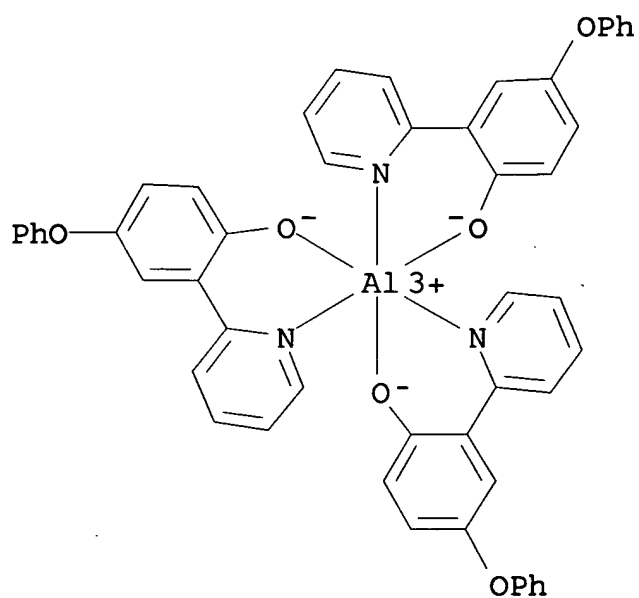


RN 193622-38-7 HCA  
CN Aluminum, [3-(1-isoquinolinyl-.kappa.N)-2-naphthalenolato-.  
.kappa.O]bis[3-(3-isoquinolinyl-.kappa.N)-2-naphthalenolato-.  
.kappa.O]- (9CI) (CA INDEX NAME)

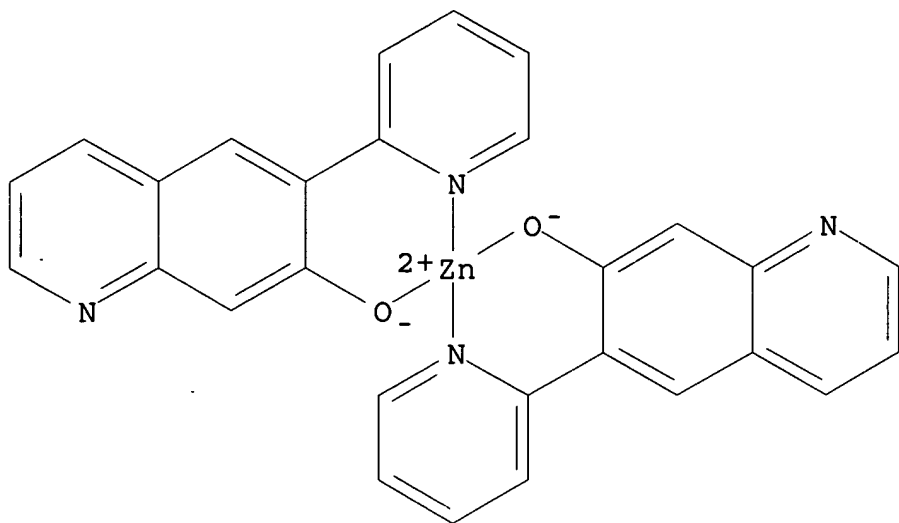


RN 193622-39-8 HCA

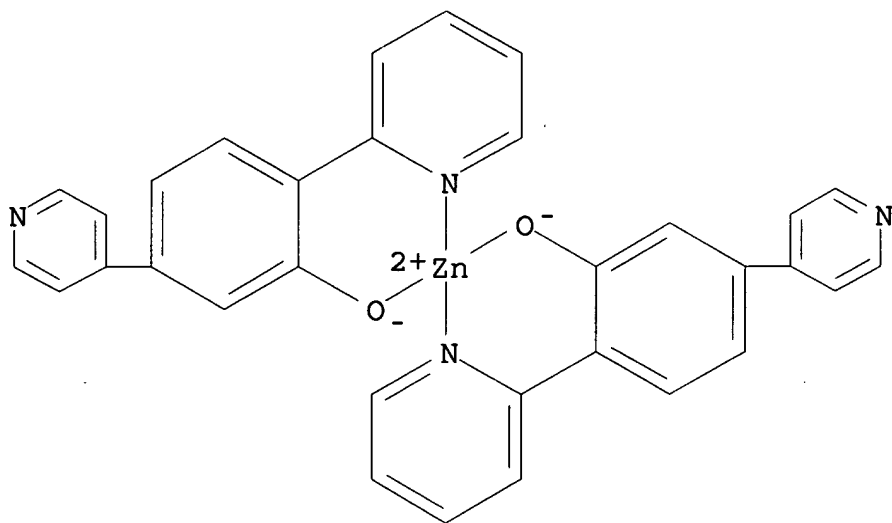
CN Aluminum, tris[4-phenoxyl-2-(2-pyridinyl-.kappa.N)phenolato-.kappa.O] -  
(9CI) (CA INDEX NAME)



RN 193622-40-1 HCA

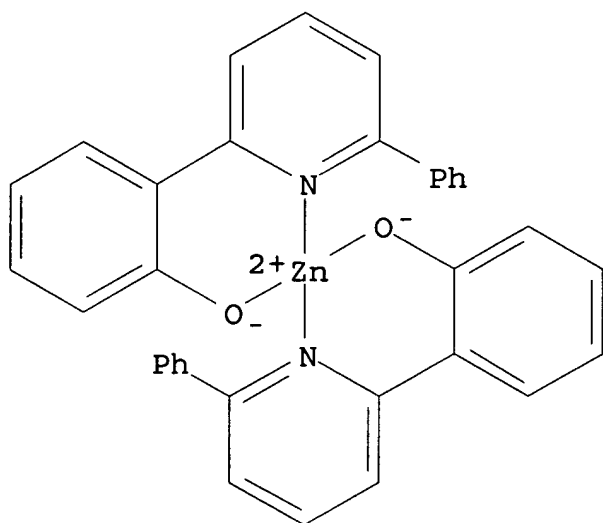
CN Zinc, bis[6-(2-pyridinyl-.kappa.N)-7-quinolinolato-.kappa.O<sup>-</sup>]-,  
(T-4) - (9CI) (CA INDEX NAME)

RN 193622-41-2 HCA

CN Zinc, bis[2-(2-pyridinyl-.kappa.N)-5-(4-pyridinyl)phenolato-.kappa.O<sup>-</sup>]-, (T-4) - (9CI) (CA INDEX NAME)

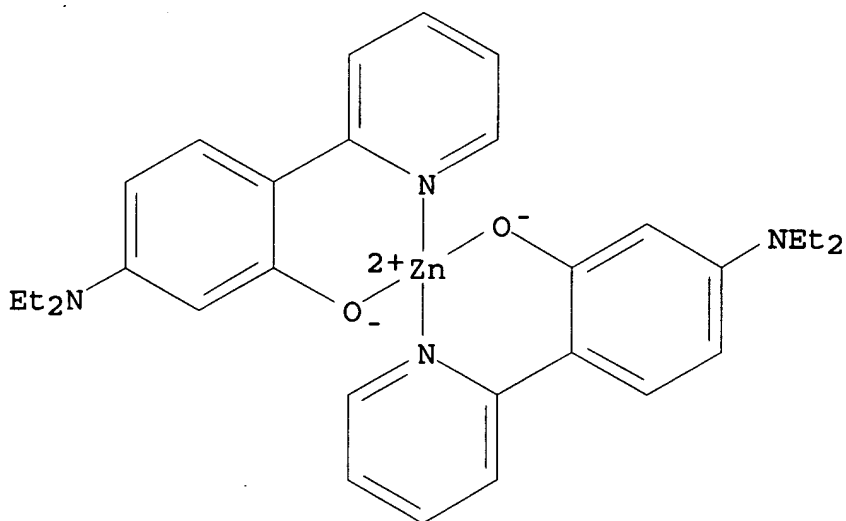
RN 193622-42-3 HCA

CN Zinc, bis[2-(6-phenyl-2-pyridinyl-.kappa.N)phenolato-.kappa.O<sup>-</sup>]-,  
(T-4) - (9CI) (CA INDEX NAME)



RN 193622-43-4 HCA

CN Zinc, bis[5-(diethylamino)-2-(2-pyridinyl-.kappa.N)phenolato-.kappa.O]-, (T-4) - (9CI) (CA INDEX NAME)



IC ICM C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST org electroluminescent device metal complex

IT Electroluminescent devices

Fluorescent substances

(material for org. electroluminescent device)

IT 1499-10-1 5862-38-4 27310-62-9 51325-91-8 123847-85-8

188049-36-7 189263-95-4 193622-08-1 193622-09-2

193622-10-5 193622-11-6 193622-12-7  
 193622-13-8 193622-14-9 193622-15-0  
 193622-16-1 193622-17-2 193622-18-3  
 193622-19-4 193622-20-7 193622-21-8  
 193622-22-9 193622-23-0 193622-25-2  
 193622-27-4 193622-29-6 193622-31-0 193622-32-1  
 193622-33-2 193622-34-3 193622-35-4  
 193622-36-5 193622-37-6 193622-38-7 193622-39-8  
 193622-40-1 193622-41-2 193622-42-3  
 193622-43-4

(material for org. electroluminescent device)

L42 ANSWER 21 OF 23 HCA COPYRIGHT 2005 ACS on STN

126:231343 Organic electroluminescent device with high  
 luminance and reliability and material for it. Tamano, Michiko;  
 Enokida, Toshio (Toyo Ink Mfg Co, Japan). Jpn. Kokai Tokkyo Koho JP  
 09020886 A2 19970121 Heisei, 12 pp. (Japanese). CODEN:  
 JKXXAF. APPLICATION: JP 1995-171741 19950707.

GI For diagram(s), see printed CA Issue.

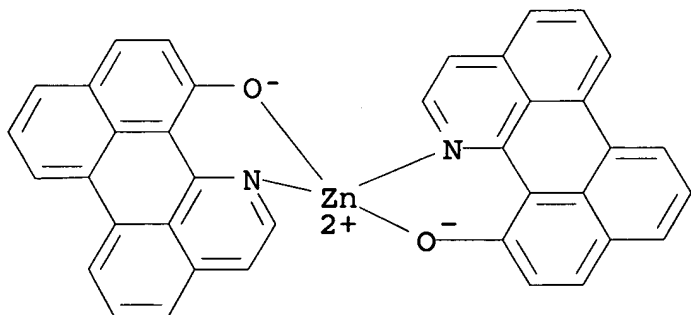
AB The material is I [A1-7 = 6-membered arom. ring or does not form a  
 ring, where .gtoreq.1 of them form a ring; L = C1-10 alkyl(oxy),  
 C6-20 aryl(oxy); M = metal; m = 1-3; n .gtoreq. 0; m + n = 2, 3].  
 The device includes I in an emitting layer and/or a cathode.

IT 188045-93-4 188046-22-2 188046-25-5  
 188046-29-9 188046-52-8 188046-58-4  
 188046-64-2 188046-66-4 188046-70-0  
 188046-76-6 188046-78-8 188046-84-6

(emitting layer; org. electroluminescent device with  
 high luminance and reliability)

RN 188045-93-4 HCA

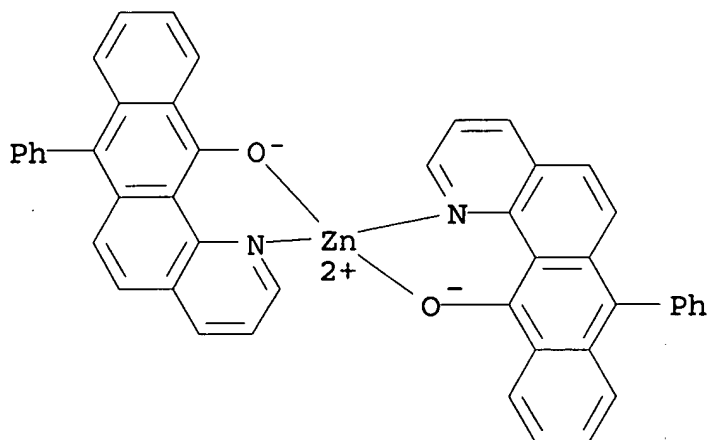
CN Zinc, bis(benzo[de]naphtho[1,8-gh]quinolin-2-olato-  
 .kappa.N1,.kappa.O12)-, (T-4)- (9CI) (CA INDEX NAME)



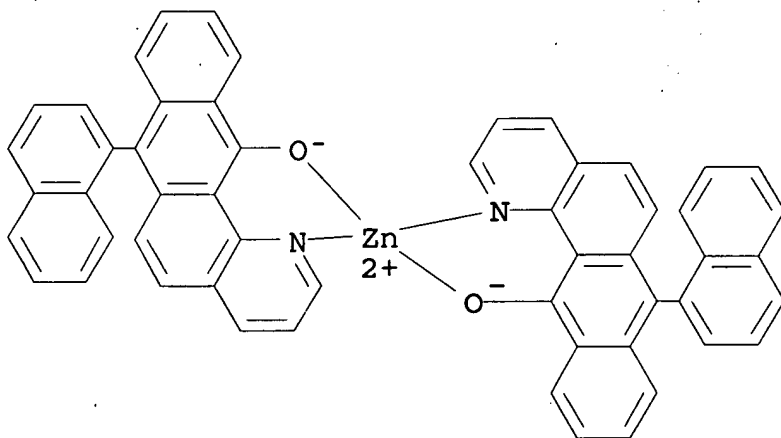
RN 188046-22-2 HCA

CN Zinc, bis(7-phenylnaphtho[2,3-h]quinolin-12-olato-  
 .kappa.N1,.kappa.O12)-, (T-4)- (9CI) (CA INDEX NAME)

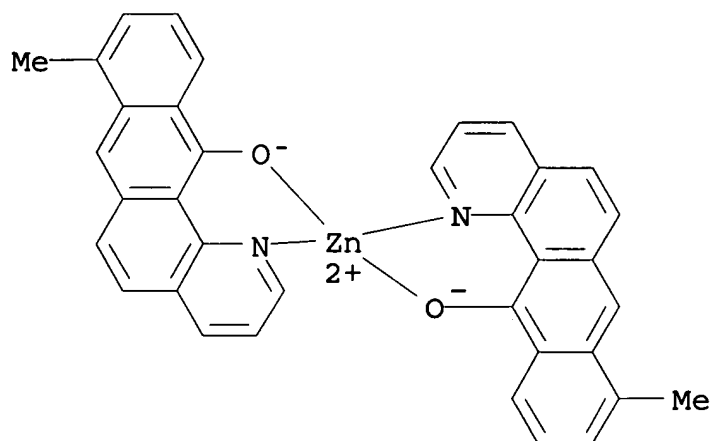




RN 188046-25-5 HCA  
 CN Zinc, bis[7-(1-naphthalenyl)naphtho[2,3-h]quinolin-12-olato-.kappa.N1,.kappa.O12]-, (T-4)- (9CI) (CA INDEX NAME)

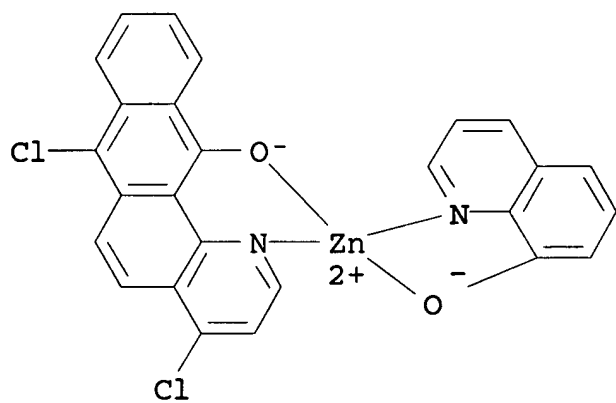


RN 188046-29-9 HCA  
 CN Zinc, bis(8-methylnaphtho[2,3-h]quinolin-12-olato-.kappa.N1,.kappa.O12)-, (T-4)- (9CI) (CA INDEX NAME)



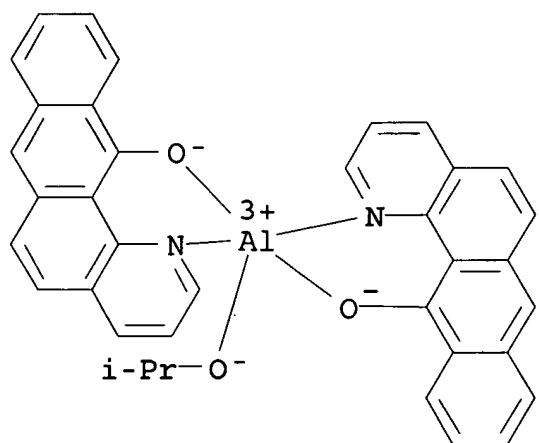
RN 188046-52-8 HCA

CN Zinc, (4,7-dichloronaphtho[2,3-h]quinolin-12-olato-.kappa.N1,.kappa.O12) (8-quinolinolato-.kappa.N1,.kappa.O8) -, (T-4) - (9CI) (CA INDEX NAME)



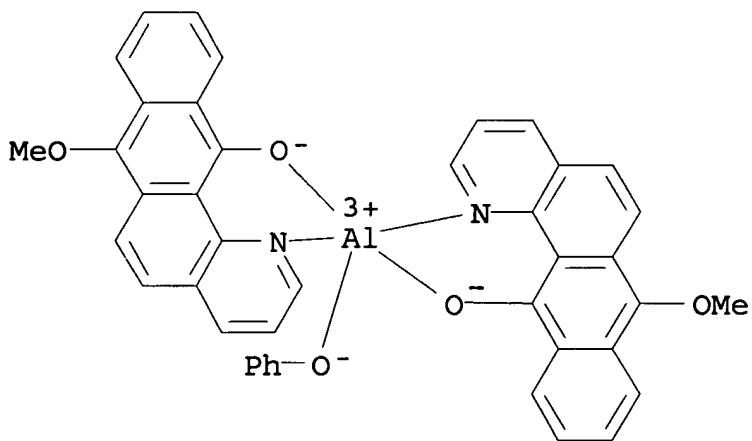
RN 188046-58-4 HCA

CN Aluminum, bis(naphtho[2,3-h]quinolin-12-olato-.kappa.N1,.kappa.O12) (2-propanolato) - (9CI) (CA INDEX NAME)



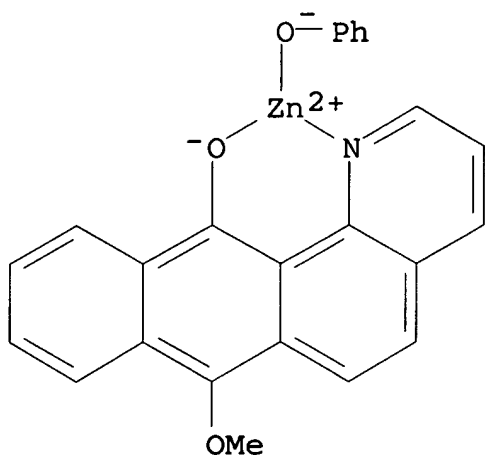
RN 188046-64-2 HCA

CN Aluminum, bis(7-methoxynaphtho[2,3-h]quinolin-12-olato-.kappa.N1,.kappa.O12)phenoxy- (9CI) (CA INDEX NAME)



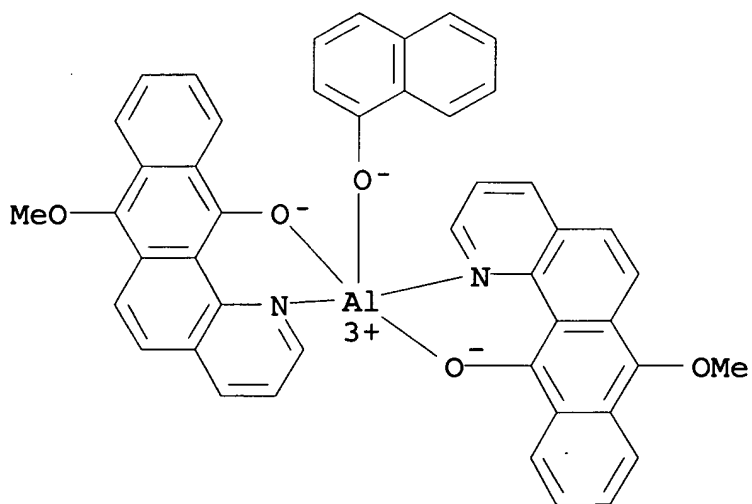
RN 188046-66-4 HCA

CN Zinc, (7-methoxynaphtho[2,3-h]quinolin-12-olato-.kappa.N1,.kappa.O12)phenoxy- (9CI) (CA INDEX NAME)



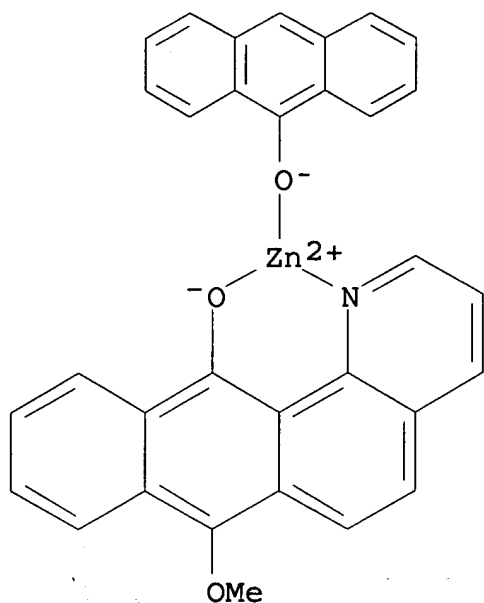
RN 188046-70-0 HCA

CN Aluminum, bis(7-methoxynaphtho[2,3-h]quinolin-12-olato-  
.kappa.N1,.kappa.O12)(1-naphthalenolato) - (9CI) (CA INDEX NAME)



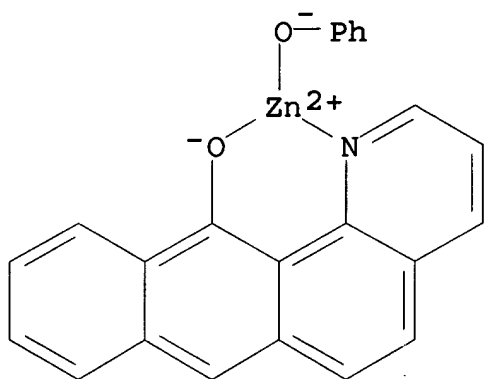
RN 188046-76-6 HCA

CN Zinc, (9-anthracenolato)(7-methoxynaphtho[2,3-h]quinolin-12-olato-  
.kappa.N1,.kappa.O12) - (9CI) (CA INDEX NAME)



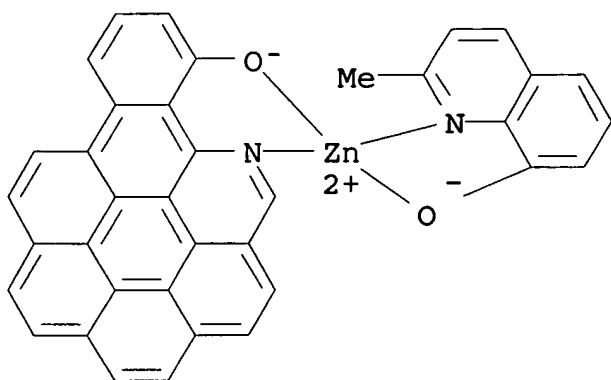
RN 188046-78-8 HCA

CN Zinc, (naphtho[2,3-h]quinolin-12-olato-.kappa.N1,.kappa.O12)phenoxy-  
(9CI) (CA INDEX NAME)



RN 188046-84-6 HCA

CN Zinc, (2-methyl-8-quinolinolato-.kappa.N1,.kappa.O8) (benzo[b]phenant  
hro[3,4,5,6-jklmn]thebenidin-9-olato-.kappa.N8,.kappa.O9) -, (T-4) -  
(9CI) (CA INDEX NAME)



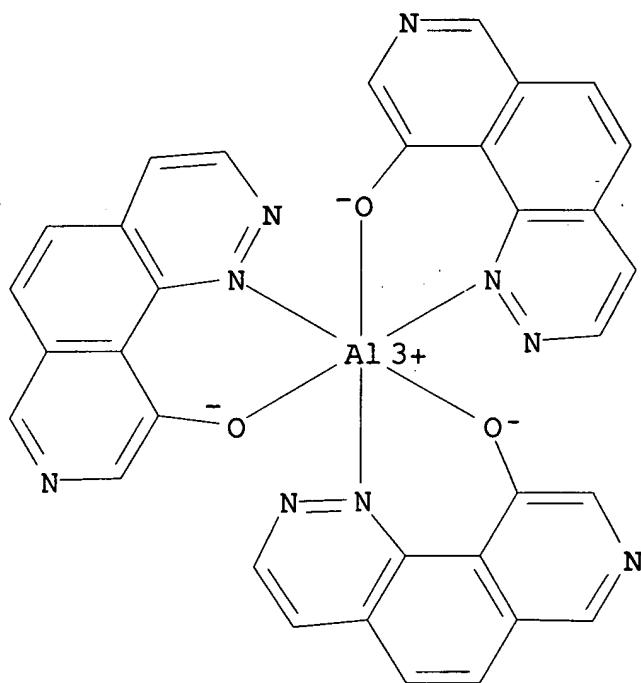
- IC ICM C09K011-06  
ICS H05B033-14; H05B033-22
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 29
- ST **electroluminescent** device org emitting layer;  
**electron transporting** metal complex  
**electroluminescent** reliability; polycondensed ring metal complex emitting **electroluminescent**
- IT **Electroluminescent** devices  
(org. **electroluminescent** device with high luminance and reliability)
- IT 188045-93-4 188045-98-9 188046-03-9 188046-08-4  
188046-13-1 188046-17-5 188046-22-2 188046-25-5  
188046-29-9 188046-33-5 188046-37-9 188046-40-4  
188046-44-8 188046-48-2 188046-52-8 188046-55-1  
188046-58-4 188046-60-8 188046-62-0 188046-64-2  
188046-66-4 188046-68-6 188046-70-0  
188046-72-2 188046-74-4 188046-76-6 188046-78-8  
188046-80-2 188046-82-4 188046-84-6  
(emitting layer; org. **electroluminescent** device with high luminance and reliability)
- L42 ANSWER 22 OF 23 HCA COPYRIGHT 2005 ACS on STN
- 126:231342 Organic **electroluminescent** device with high luminance and reliability and material for it. Tamano, Michiko; Enokida, Toshio (Toyo Ink Mfg Co, Japan). Jpn. Kokai Tokkyo Koho JP 09020885 A2 19970121 Heisei, 12 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1995-171740 19950707.
- GI For diagram(s), see printed CA Issue.
- AB The material is I [ring A1-3 = condensed 6-membered arom. rings; L = C1-10 alkyl(oxy), C6-20 aryl(oxy); M = metal; m = 1-3; n .gtoreq. 0; m + n = 2, 3]. The device includes I in an emitting layer and/or a cathode.

IT 188045-99-0 188046-04-0 188046-14-2  
188046-26-6 188046-30-2 188046-34-6  
188046-38-0 188046-53-9 188046-59-5  
188046-61-9 188046-67-5 188046-81-3

(emitting layer; org. electroluminescent device with  
high luminance and reliability)

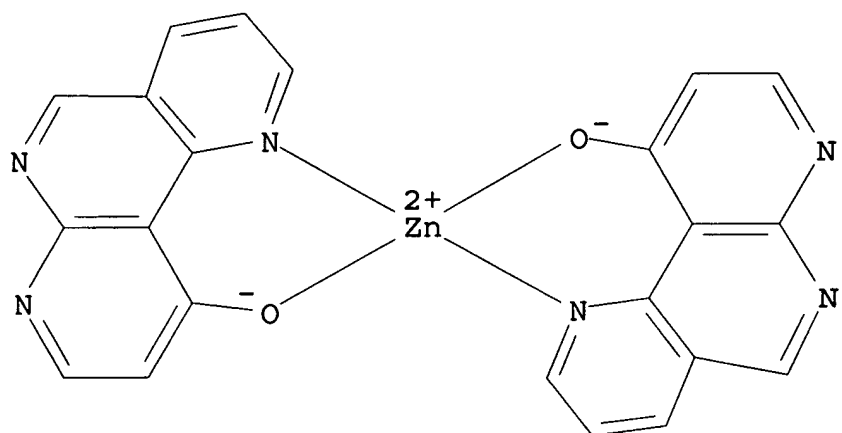
RN 188045-99-0 HCA

CN Aluminum, tris(pyrido[3,4-h]cinnolin-10-olato-.kappa.N1,.kappa.O10) -  
(9CI) (CA INDEX NAME)



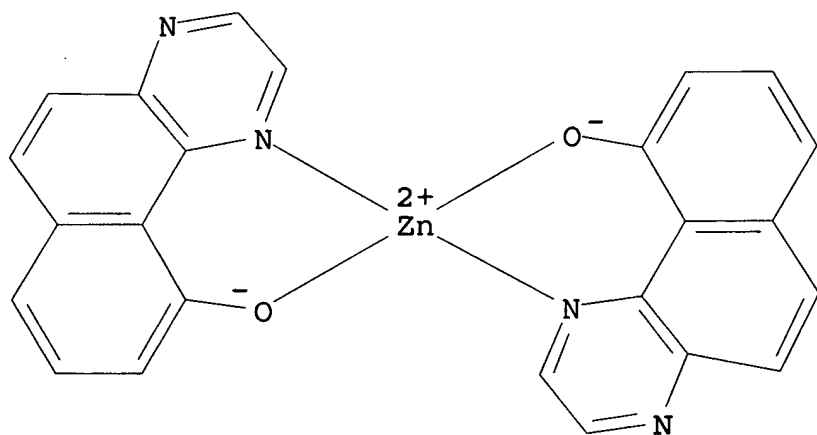
RN 188046-04-0 HCA

CN Zinc, bis(pyrido[2,3-h]-1,6-naphthyridin-10-olato-  
.kappa.N1,.kappa.O10)-, (T-4)- (9CI) (CA INDEX NAME)



RN 188046-14-2 HCA

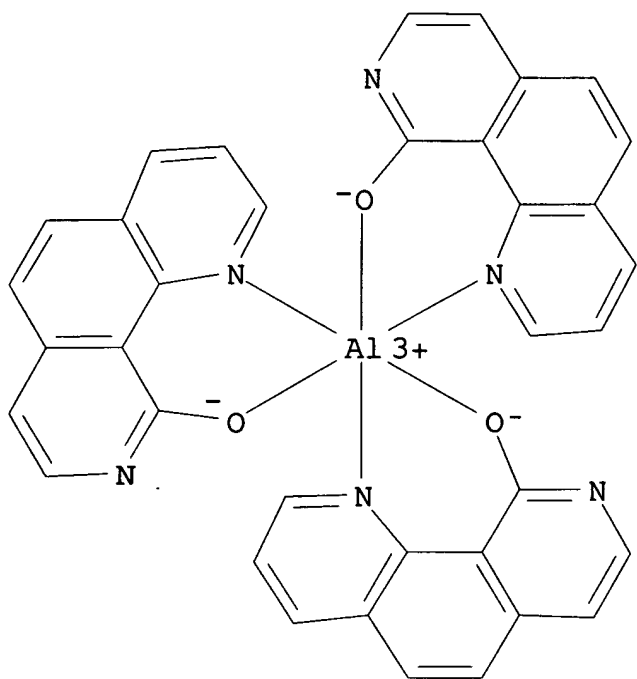
CN Zinc, bis(benzo[f]quinoxalin-10-olato-.kappa.N1,.kappa.O10)-, (T-4)-  
(9CI) (CA INDEX NAME)



RN 188046-26-6 HCA

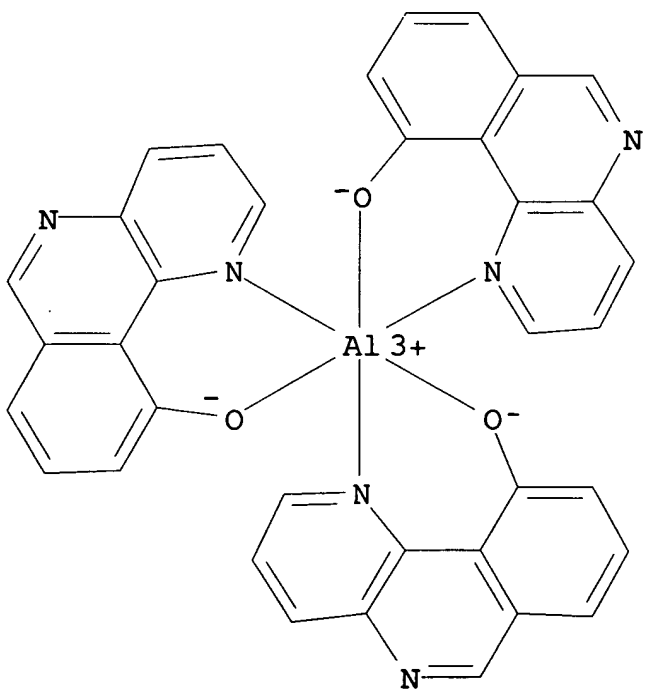
CN Aluminum, tris(1,9-phenanthrolin-10-olato-.kappa.N1,.kappa.O10)-  
(9CI) (CA INDEX NAME)





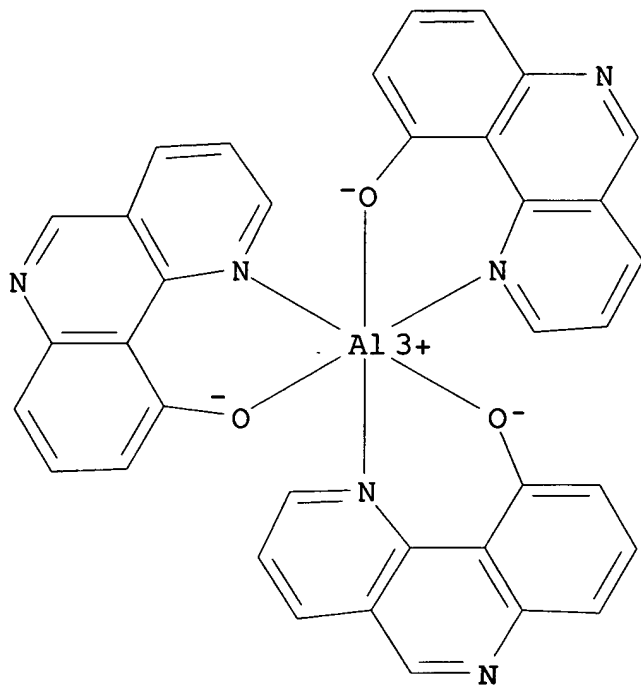
RN 188046-30-2 HCA

CN Aluminum, tris(benzo[c]-1,5-naphthyridin-10-olato-  
.kappa.N1,.kappa.O10)- (9CI) (CA INDEX NAME)



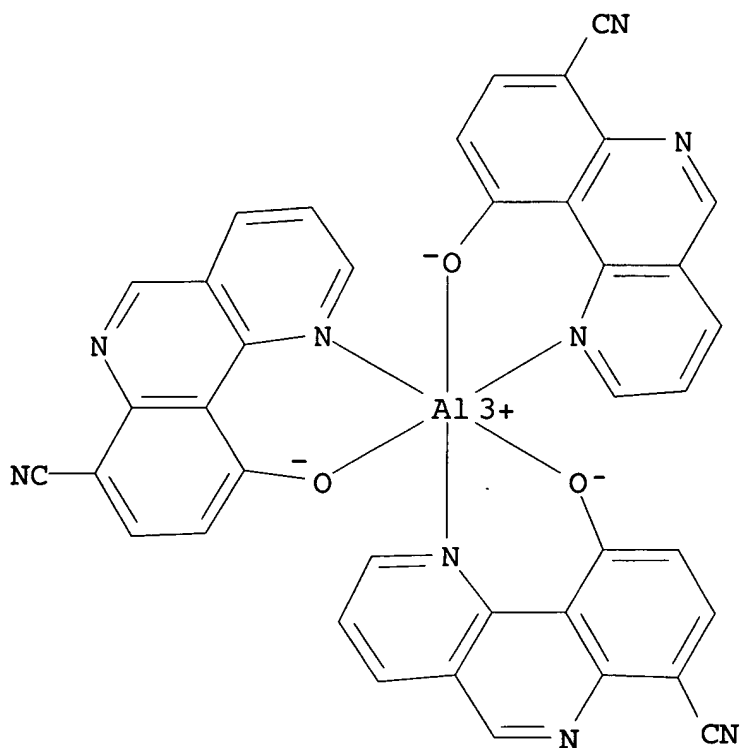
RN 188046-34-6 HCA

CN Aluminum, tris(benzo[h]-1,6-naphthyridin-10-olato-  
.kappa.N1,.kappa.O10)- (9CI) (CA INDEX NAME)



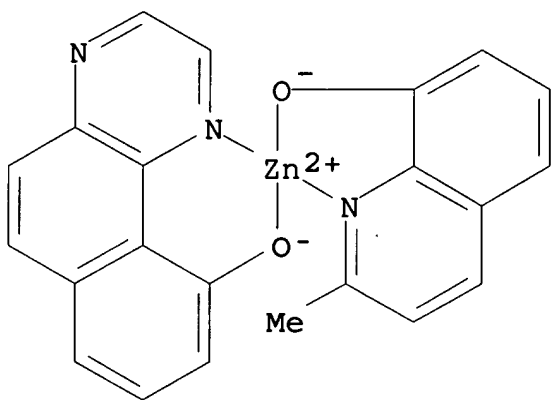
RN 188046-38-0 HCA

CN Aluminum, tris[10-(hydroxy-.kappa.O)benzo[h]-1,6-naphthyridine-7-  
carbonitrilato-.kappa.N1]- (9CI) (CA INDEX NAME)



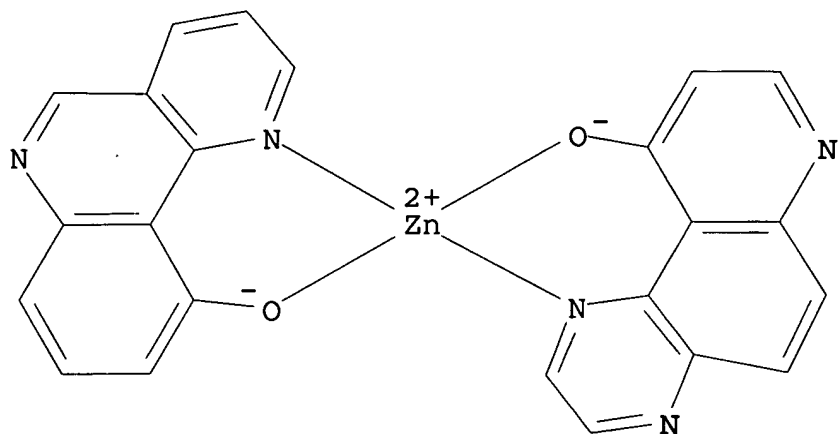
RN 188046-53-9 HCA

CN Zinc, (benzo[f]quinoxalin-10-olato-.kappa.N1,.kappa.O10) (2-methyl-8-quinolinolato-.kappa.N1,.kappa.O8)-, (T-4)- (9CI) (CA INDEX NAME)



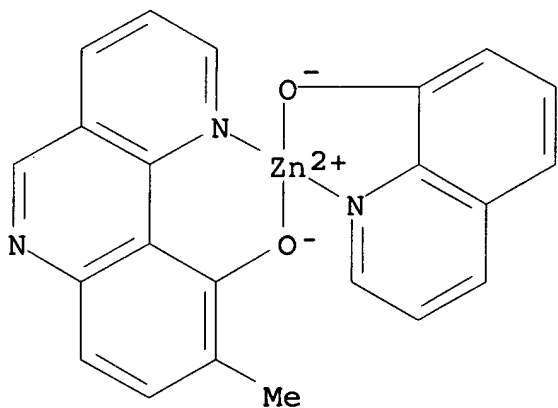
RN 188046-59-5 HCA

CN Zinc, (benzo[h]-1,6-naphthyridin-10-olato-.kappa.N1,.kappa.O10) (pyrido[3,2-f]quinoxalin-10-olato-.kappa.N1,.kappa.O10)-, (T-4)- (9CI) (CA INDEX NAME)



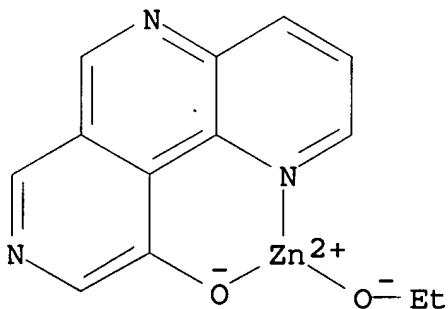
RN 188046-61-9 HCA

CN Zinc, (9-methylbenzo[h]-1,6-naphthyridin-10-olato-  
.kappa.N1,.kappa.O10)(8-quinolinolato-.kappa.N1,.kappa.O8)-, (T-4)-  
(9CI) (CA INDEX NAME)

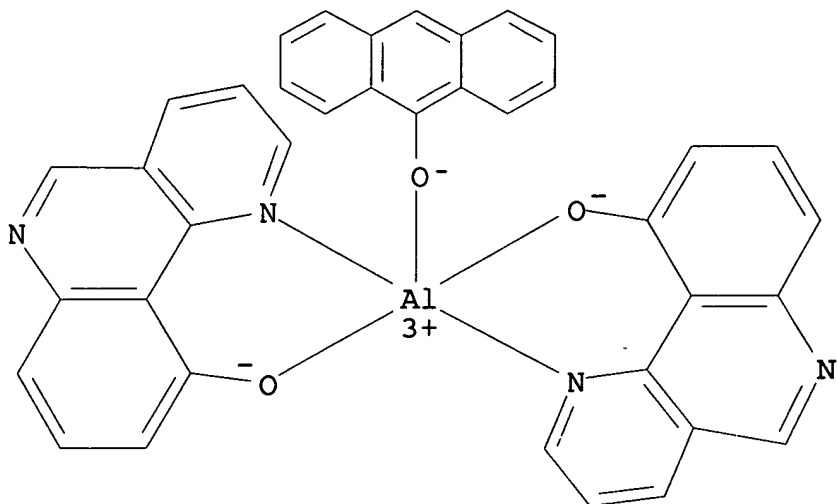


RN 188046-67-5 HCA

CN Zinc, ethoxy(pyrido[3,4-c]-1,5-naphthyridin-10-olato-  
.kappa.N1,.kappa.O10)- (9CI) (CA INDEX NAME)



RN 188046-81-3 HCA  
 CN Aluminum, (9-anthracenolato)bis(benzo[h]-1,6-naphthyridin-10-olato-  
 .kappa.N1,.kappa.O10)- (9CI) (CA INDEX NAME)



IC ICM C09K011-06  
 ICS H05B033-14  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 29  
 ST **electroluminescent** device org emitting layer;  
**electron transporting** metal complex  
**electroluminescent** reliability  
 IT **Electroluminescent** devices  
 (org. **electroluminescent** device with high luminance and reliability)  
 IT 188045-89-8 188045-94-5 188045-99-0 188046-04-0  
 188046-09-5 188046-14-2 188046-18-6 188046-23-3  
 188046-26-6 188046-30-2 188046-34-6  
 188046-38-0 188046-41-5 188046-45-9 188046-49-3  
 188046-53-9 188046-56-2 188046-59-5  
 188046-61-9 188046-63-1 188046-65-3 188046-67-5  
 188046-69-7 188046-71-1 188046-73-3 188046-75-5 188046-77-7  
 188046-79-9 188046-81-3 188046-83-5  
 (emitting layer; org. **electroluminescent** device with high luminance and reliability)

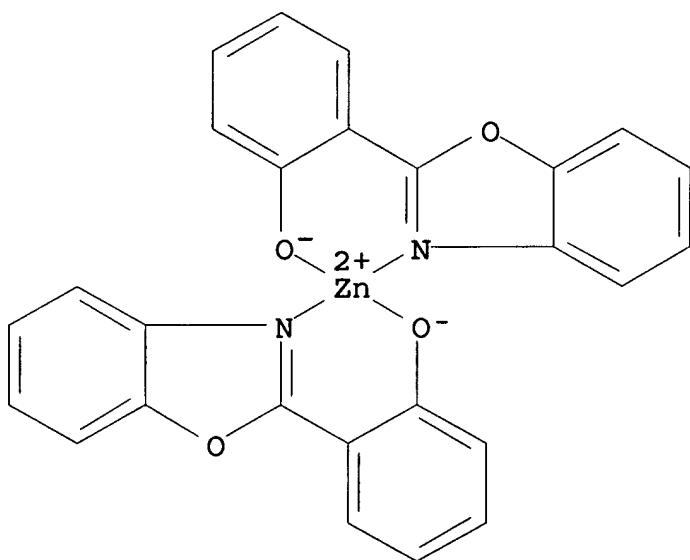
L42 ANSWER 23 OF 23 HCA COPYRIGHT 2005 ACS on STN  
 124:301973 New organometallic complexes for use in **light emitting** devices. Shi, Song Q. (Motorola, Inc., USA). Eur. Pat. Appl. EP 700917 A2 19960313, 19 pp. DESIGNATED

STATES: R: DE, GB. (English). CODEN: EPXXDW. APPLICATION: EP  
1995-114039 19950907. PRIORITY: US 1994-304451 19940912.

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

- AB Organometallic complexes for use in **electroluminescent** (**EL**) devices are described by the general formulas I an II  
(M2 = a divalent metal; M3 = a trivalent metal; X = O, S, NH, or CH2; R1-8 = H or hydrocarbon groups or functional groups; and L1-5 = H or hydrocarbon groups or functional groups). The organometallic complexes may be prepd. by mixing org. ligands with metal salts. **Electroluminescent** devices employing the organometallic materials in the **light emission** layers are also described. Fabrication of the devices entails sequential formation on a glass substrate of a transparent conductor layer, a hole-transporting layer, an emitting layer comprising the complexes, and a conductive layer.
- IT 23467-27-8  
(organometallic complexes for use in **light-emitting** devices and their prepn. and the devices and their fabrication)
- RN 23467-27-8 HCA
- CN Zinc, bis[2-(2-benzoxazolyl-.kappa.N3)phenolato-.kappa.O]-, (T-4) -  
(9CI) (CA INDEX NAME)

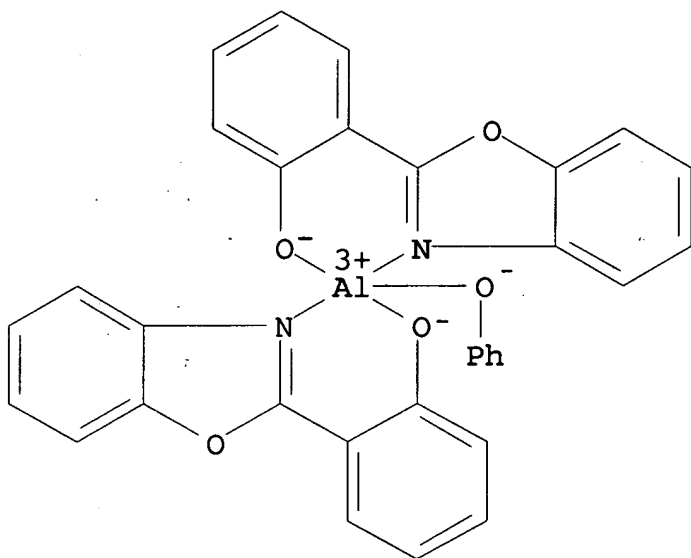


IT 176045-96-8P

(organometallic complexes for use in **light-emitting** devices and their prepn. and the devices and their fabrication)

RN 176045-96-8 HCA

CN Aluminum, bis[2-(2-benzoxazolyl-.kappa.N3)phenolato-.kappa.O]phenoxy-(9CI) (CA INDEX NAME)



IC ICM C07F005-00

ICS H01L033-00

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 29

ST **light emitting** device organometallic complex

IT **Electroluminescent** devices

(organometallic complexes for use in **light-emitting** devices and their prepn. and the devices and their fabrication)

IT 7439-95-4D, Magnesium, compds. 7440-55-3D, Gallium, compds.

7440-74-6D, Indium, compds. **23467-27-8**

(organometallic complexes for use in **light-emitting** devices and their prepn. and the devices and their fabrication)

IT 128904-10-9P **176045-96-8P**

(organometallic complexes for use in **light-emitting** devices and their prepn. and the devices and their fabrication)

IT 108-95-2, Phenol, reactions 835-64-3, 2-(2-Hydroxyphenyl)benzoxazole 2963-66-8, 2-(2-

Hydroxyphenyl)benzimidazole 3411-95-8, 2-(2-  
Hydroxyphenyl)benzothiazole 7446-70-0, Aluminum chloride,  
reactions 13510-49-1, Beryllium sulfate  
(organometallic complexes for use in **light-**  
**emitting** devices and their prepn. and the devices and  
their fabrication)



=> file reg

FILE 'REGISTRY' ENTERED AT 21:33:16 ON 14 DEC 2005  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
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FILE 'LREGISTRY' ENTERED AT 21:00:51 ON 14 DEC 2005

L1 STR  
L2 STR

FILE 'REGISTRY' ENTERED AT 21:07:31 ON 14 DEC 2005

L3 0 S L1

FILE 'LREGISTRY' ENTERED AT 21:08:08 ON 14 DEC 2005

L4 STR L1

FILE 'REGISTRY' ENTERED AT 21:09:22 ON 14 DEC 2005

L5 9 S L4  
L6 2226 S L4 FUL  
SAV L6 GAR451/A  
L7 15 S L1 SSS SAM SUB=L6  
L8 STR L1  
L9 1 S L8 SSS SAM SUB=L6  
L10 22 S L8 SSS FUL SUB=L6  
SAV L10 GAR451A/A  
L11 0 S L2 SSS SAM SUB=L6  
L12 17 S L2 SSS FUL SUB=L6  
SAV L12 GAR700/A

FILE 'CAOLD' ENTERED AT 21:17:42 ON 14 DEC 2005

L13 0 S L12  
L14 0 S L10

FILE 'ZCAPLUS' ENTERED AT 21:18:01 ON 14 DEC 2005

L15 91 S L12  
L16 95 S L10

FILE 'HCA' ENTERED AT 21:18:30 ON 14 DEC 2005

L17 91 S L12  
L18 95 S L10  
L19 98759 S (ELECTROLUM!N? OR ORGANOLUM!N? OR (ELECTRO OR ORGANO OR  
L20 53577 S (ELECTRON# OR E) (2A) (TRANSPORT? OR MIGRAT? OR MOVE# OR  
L21 91 S L17 AND L18

L22 87 S L21 AND (L19 OR L20)

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L23 STR L2

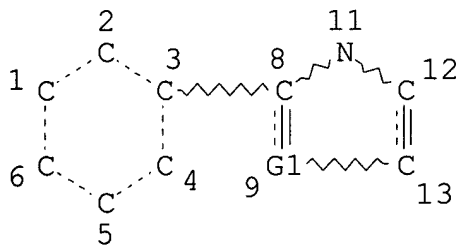
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L25 10 S L23 SSS FUL SUB=L6  
SAV L25 GAR700A/A  
L26 STR L8  
L27 1 S L26 SSS SAM SUB=L6  
L28 20 S L26 SSS FUL SUB=L6  
SAV L28 GAR451B/A

FILE 'HCA' ENTERED AT 21:28:16 ON 14 DEC 2005  
L29 90 S L25  
L30 94 S L28  
L31 90 S L29 AND L30  
L32 86 S L31 AND (L19 OR L20)  
L33 90 S L30 AND (L19 OR L20)  
L34 4 S L33 NOT L32  
L35 57 S L32 AND (1840-2002/PY OR 1840-2002/PRY)

FILE 'REGISTRY' ENTERED AT 21:33:16 ON 14 DEC 2005

=> d l25 que stat

L4 STR



VAR G1=O/S/SE/TE/N

NODE ATTRIBUTES:

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CONNECT IS E3 RC AT 5

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

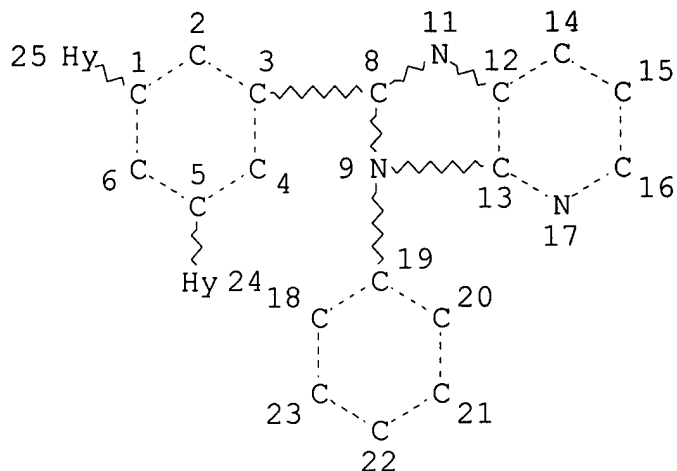
RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 11

STEREO ATTRIBUTES: NONE

L6 2226 SEA FILE=REGISTRY SSS FUL L4

L23 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

GGCAT IS PCY UNS AT 24

GGCAT IS PCY UNS AT 25

DEFAULT ECLEVEL IS LIMITED

ECOUNT IS E3 N AT 24

ECOUNT IS E3 N AT 25

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 23

STEREO ATTRIBUTES: NONE

L25 10 SEA FILE=REGISTRY SUB=L6 SSS FUL L23

100.0% PROCESSED 74 ITERATIONS

10 ANSWERS

SEARCH TIME: 00.00.01

=> file hca

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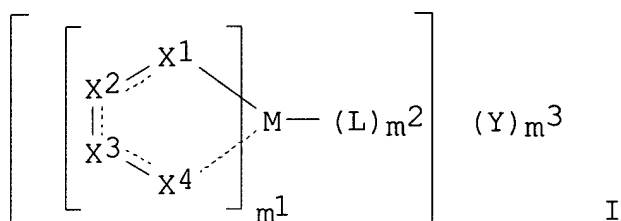
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=> d 135 1-57 cbib abs hitstr hitind

L35 ANSWER 1 OF 57 HCA COPYRIGHT 2005 ACS on STN  
 141:131053 Organic **electroluminescent** device having  
**light-emitting** layer containing metal complex as  
 host material. Igarashi, Tatsuya; Ise, Toshihiro (Fuji Photo Film  
 Co., Ltd., Japan). U.S. Pat. Appl. Publ. US 2004137268 A1 20040715,  
 20 pp. (English). CODEN: USXXCO. APPLICATION: US 2003-743023  
 20031223. PRIORITY: JP 2002-382453 20021227; JP 2003-408525  
 20031208.

GI



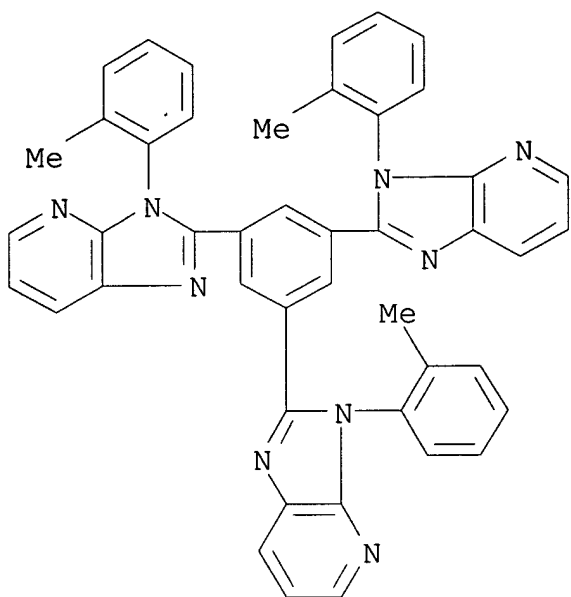
AB Org. **electroluminescent** devices are described which  
 comprise a pair of electrodes; and at least 1 org. compd. layer  
 between the pair of electrodes, the at least 1 org. compd. layer  
 including a **light emitting** layer, where the  
**light emitting** layer contains at least one host  
 material and at least one luminescent material, and the host  
 material is a compd. represented by the formula (I), where X1-4 each  
 independently represent a substituted or unsubstituted O atom, a  
 substituted or unsubstituted S atom, a substituted or unsubstituted  
 N atom, a substituted or unsubstituted C atom or a substituted or  
 unsubstituted P atom; M represents a metal ion; L represents a  
 ligand; Y represents a counter ion; m1 represents an integer of 1 to  
 4; m2 represents an integer of 0 to 6; m3 represents an integer of 0  
 to 4; and the X1-X2 bond, the X2-X3 bond, and the X3-X4 bond is a  
 single bond or a double bond; with the proviso that a compd. in  
 which the ligand composed of X1-4 is not derived from an  
 8-hydroxyquinolinol deriv.

IT **358974-66-0**

(org. **electroluminescent** device having **light-**  
**emitting** layer contg. metal complex as host material)

RN 358974-66-0 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-  
 methylphenyl)- (9CI) (CA INDEX NAME)



IC ICM H05B033-14

INCL 428690000; 428917000; 313504000; 257102000; 257103000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 76, 78

ST org **electroluminescent** device host metal complex  
**OLED**

IT **Electroluminescent** devices  
(org. **electroluminescent** device having **light-emitting** layer contg. metal complex as host material)

IT Coordination compounds  
(org. **electroluminescent** device having **light-emitting** layer contg. metal complex as host material)

IT 32537-08-9 58280-31-2 58328-31-7, CBP 65181-78-4, TPD  
94928-86-6, Tris(2-phenylpyridine), iridium 123847-85-8,  
4,4'-Bis[N-(1-naphthyl)-N-phenylamino]biphenyl 351863-09-7  
**358974-66-0** 387859-70-3 462648-27-7

(org. **electroluminescent** device having **light-emitting** layer contg. metal complex as host material)

L35 ANSWER 2 OF 57 HCA COPYRIGHT 2005 ACS on STN

141:131052 Organic **electroluminescent** device with  
**light-emitting** layer containing a metal complex as  
a host material. Igarashi, Tatsuya; Ise, Toshihiro (Fuji Photo Film  
Co., Ltd., Japan). U.S. Pat. Appl. Publ. US 2004137267 A1 20040715,  
20 pp. (English). CODEN: USXXCO. APPLICATION: US 2003-738307  
20031218. PRIORITY: JP 2002-382454 20021227.

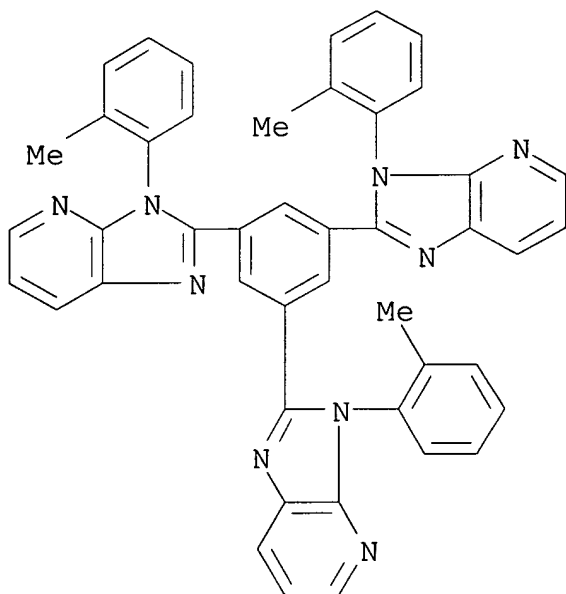
AB Org. **electroluminescent** devices are described which comprise a pair of electrodes; and at least one org. compd. layer including a **light-emitting** layer between the pair of electrodes, where the **light-emitting** layer contains at least one host material and at least one luminescent material, and the host material is a metal complex contg. a metal in groups 4 to 11 or periods 5 to 6 of the Periodic Table.

IT **358974-66-0 377092-10-9**

(org. **electroluminescent** device with **light-emitting** layer contg. metal complex as host material)

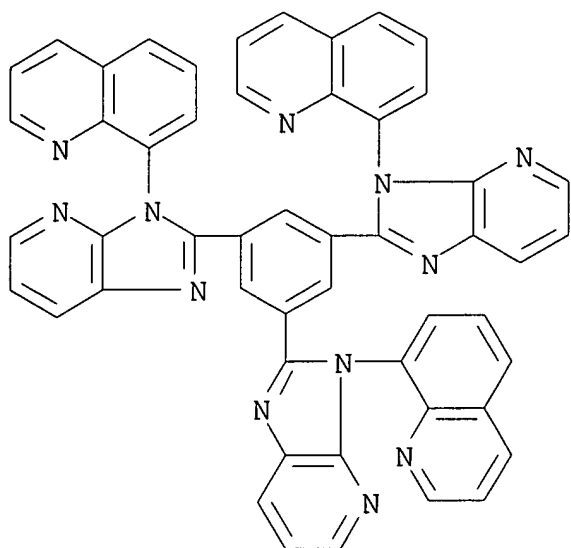
RN 358974-66-0 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-methylphenyl)- (9CI) (CA INDEX NAME)



RN 377092-10-9 HCA

CN Quinoline, 8,8',8''-[1,3,5-benzenetriyltris(3H-imidazo[4,5-b]pyridine-2,3-diyl)]tris- (9CI) (CA INDEX NAME)



IC ICM B32B009-00  
ICS B32B019-00  
INCL 428690000  
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 76, 78  
ST org **electroluminescent** device metal complex host  
**OLED**  
IT **Electroluminescent** devices  
(org. **electroluminescent** device with **light-emitting** layer contg. metal complex as host material)  
IT Rare earth complexes  
Transition metal complexes  
(org. **electroluminescent** device with **light-emitting** layer contg. metal complex as host material)  
IT **Luminescent** substances  
Phosphorescent substances  
(org. **electroluminescent** device with **light-emitting** layer contg. metal complex as host material and)  
IT 7439-89-6D, Iron, compds. 7439-96-5D, Manganese, compds.  
7439-98-7D, Molybdenum, compds. 7440-02-0D, Nickel, compds.  
7440-04-2D, Osmium, compds. 7440-05-3D, Palladium, compds.  
7440-15-5D, Rhenium, compds. 7440-17-7D, Rubidium, compds.  
7440-18-8D, Ruthenium, compds. 7440-22-4D, Silver, compds.  
7440-24-6D, Strontium, compds. 7440-30-4D, Thulium, compds.  
7440-31-5D, Tin, compds. 7440-32-6D, Titanium, compds.  
7440-33-7D, Tungsten, compds. 7440-36-0D, Antimony, compds.  
7440-39-3D, Barium, compds. 7440-46-2D, Cesium, compds.

7440-50-8D, Copper, compds. 7440-54-2D, Gadolinium, compds.  
7440-57-5D, Gold, compds. 7440-67-7D, Zirconium, compds.  
7440-74-6D, Indium, compds.

(org. **electroluminescent** device with **light-emitting** layer contg. metal complex as host material)

IT 79183-73-6 82312-83-2 94928-86-6, Tris(2-phenylpyridine),  
iridium 123847-85-8, NPD 134984-37-5 139092-78-7 303049-17-4  
**358974-66-0** 359014-72-5 376367-93-0 **377092-10-9**  
387859-70-3 435294-03-4 439801-48-6 690977-83-4 693794-98-8

(org. **electroluminescent** device with **light-emitting** layer contg. metal complex as host material)

L35 ANSWER 3 OF 57 HCA COPYRIGHT 2005 ACS on STN

141:96373 Organic **electroluminescent** device. Ise, Toshihiro;  
Igarashi, Tatsuya; Okada, Hisashi (Fuji Photo Film Co., Ltd.,  
Japan). PCT Int. Appl. WO 2004055130 A1 20040701, 66 pp.  
DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR,  
BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG,  
ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR,  
KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI,  
NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ,  
TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW; RW: AT,  
BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR,  
IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English).  
CODEN: PIXXD2. APPLICATION: WO 2003-JP16195 20031217. PRIORITY: JP  
2002-365280 20021217.

AB An org. **electroluminescent** device comprising: a pair of  
electrode; and at least one org. layer between the pair of  
electrode, the at least one org. layer including a luminescent  
layer, wherein the luminescent layer contains at least one  
phosphorescent material and at least one compd. with the formula  
defined herein.

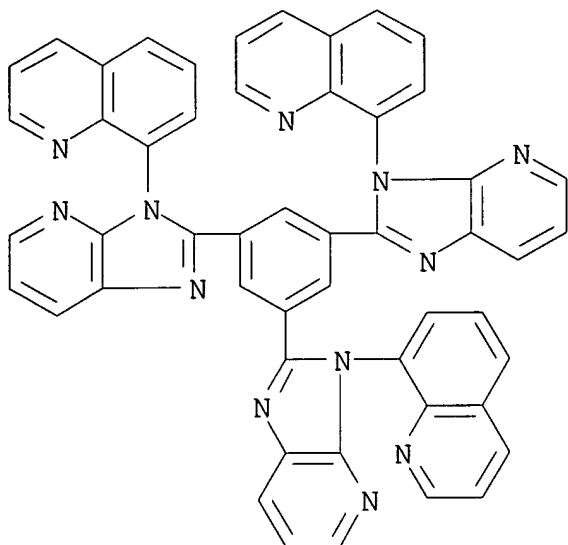
IT **377092-10-9**

(org. **electroluminescent** device and org. phosphorescent  
substances for it)

RN 377092-10-9 HCA

CN Quinoline, 8,8',8'''-[1,3,5-benzenetriyltris(3H-imidazo[4,5-  
b]pyridine-2,3-diyl)]tris- (9CI) (CA INDEX NAME)

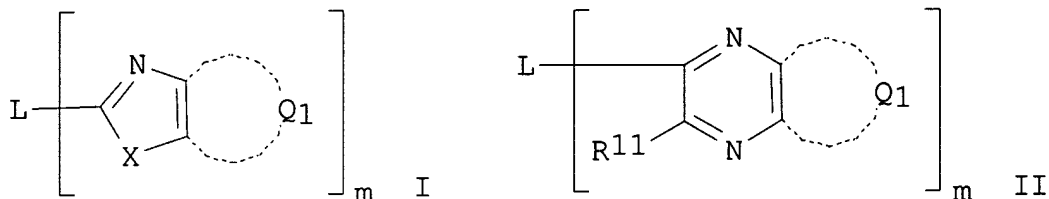




IC ICM C09K011-06  
ICS H05B033-14  
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
ST org **electroluminescent** device LED org  
phosphorescent **luminescent** material  
IT Vapor deposition process  
(chem., fabrication using; org. **electroluminescent**  
device and org. phosphorescent substances for it)  
IT **Electroluminescent** devices  
**Luminescent** substances  
Phosphorescent substances  
(org. **electroluminescent** device and org.  
phosphorescent substances for it)  
IT 2085-33-8, Aluminum tris(8-hydroxyquinolinato) 7429-90-5,  
Aluminum, uses 7789-24-4, Lithium fluoride, uses 50926-11-9,  
Indium tin oxide 65181-78-4, TPD  
(org. **electroluminescent** device and org. phosphorescent  
substances for it)  
IT 25135-52-8 58328-31-7 94928-86-6 155090-83-8, Baytron P  
208187-79-5 **377092-10-9**  
(org. **electroluminescent** device and org. phosphorescent  
substances for it)

L35 ANSWER 4 OF 57 HCA COPYRIGHT 2005 ACS on STN  
141:96369 Organic **electroluminescent** element. Nishita,  
Nobuhiro (Japan). U.S. Pat. Appl. Publ. US 2004126619 A1 20040701,  
31 pp. (English). CODEN: USXXCO. APPLICATION: US 2003-732451  
20031211. PRIORITY: JP 2002-361110 20021212.

GI



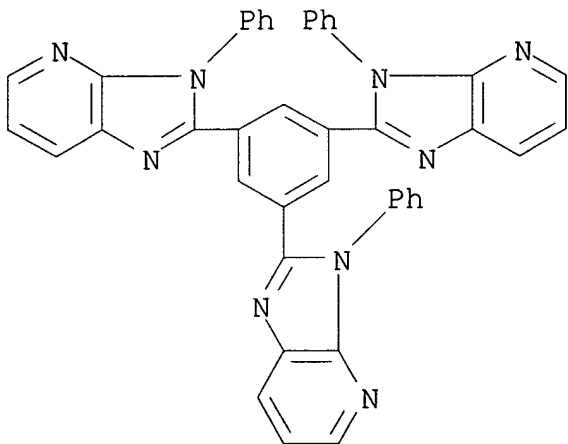
AB An org. **electroluminescent** device is described comprising a substrate; a cathode; at least one org. layer, at least one of the at least one org. layer being a **light-emitting** layer; and an anode, wherein the element further comprises a mixt. layer contg. an inorg. metal salt and an **electron transporting** org. material so that the cathode, the mixt. layer and the org. layer are in this order, and the **electron transporting** org. material is at least one of compds. represented by the formula I and II, wherein X = O, S, Se, Te or N-R, R = a hydrogen atom, an aliph. hydrocarbonyl group, an aryl group or a heterocyclic group, Q = atoms necessary for forming an arom. heterocyclic ring, m = 2,3,4,..., and L = a linking group; R11 = a hydrogen atom or a substituent.

IT **313950-73-1 328238-10-4 358974-66-0**  
**377092-10-9 714215-62-0**

(**electron transporting** material; org.  
**electroluminescent** element using novel **electron**  
**transporting** material)

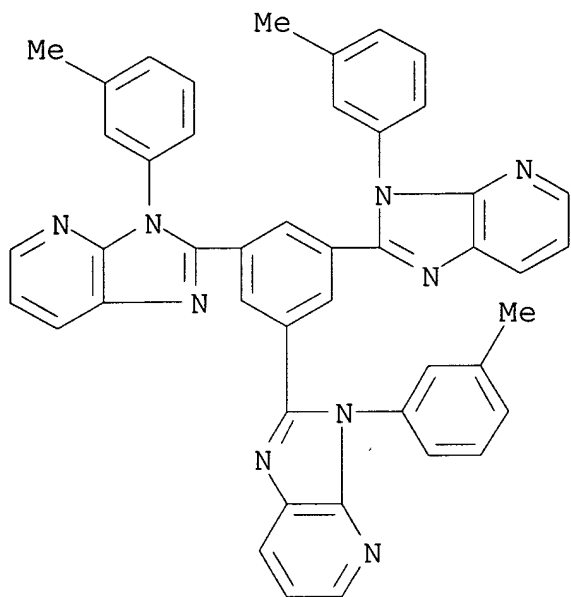
RN 313950-73-1 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-phenyl- (9CI) (CA INDEX NAME)



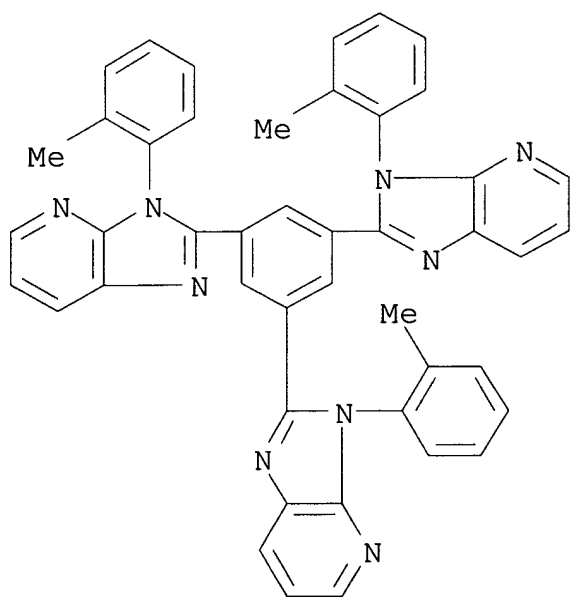
RN 328238-10-4 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(3-methylphenyl)- (9CI) (CA INDEX NAME)



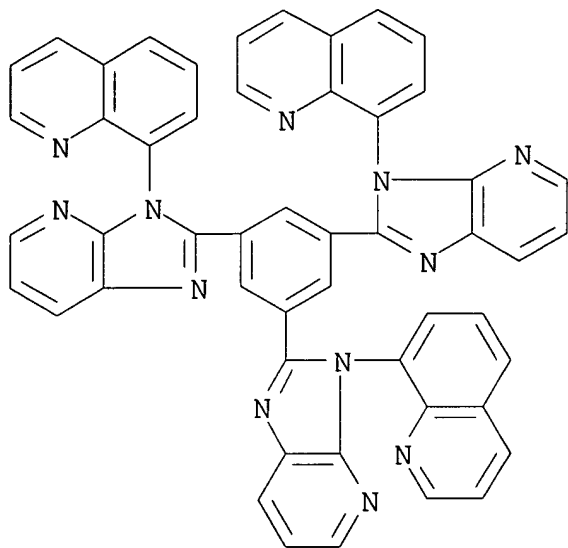
RN 358974-66-0 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-methylphenyl)- (9CI) (CA INDEX NAME)



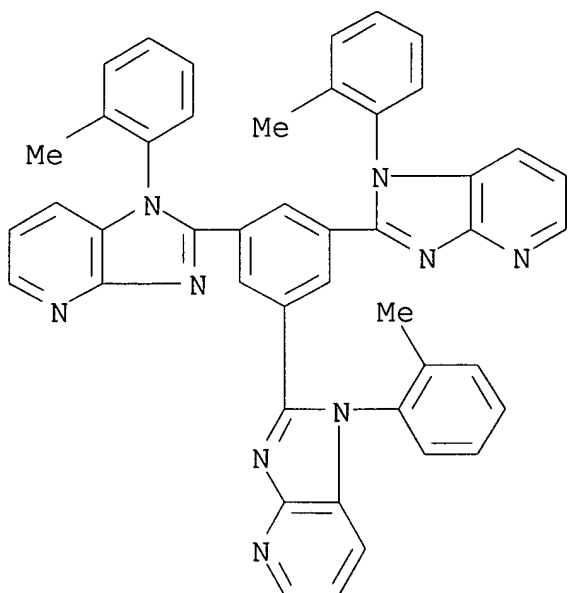
RN 377092-10-9 HCA

CN Quinoline, 8,8',8''-[1,3,5-benzenetriyl]tris(3H-imidazo[4,5-b]pyridine-2,3-diyl)]tris- (9CI) (CA INDEX NAME)



RN 714215-62-0 HCA

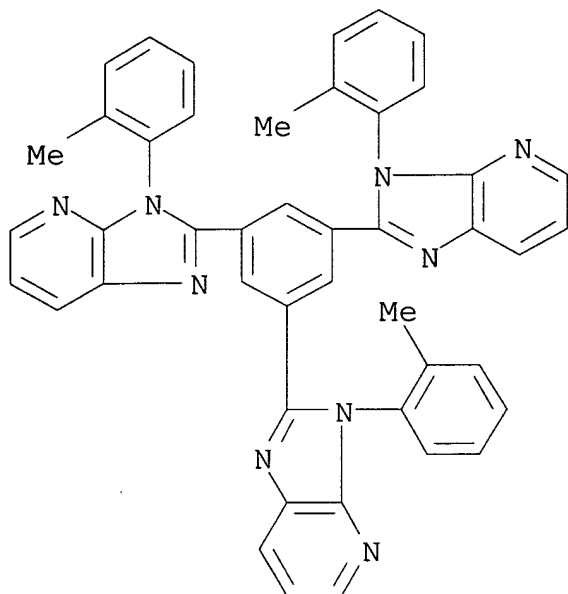
CN 1H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[1-(2-methylphenyl)- (9CI) (CA INDEX NAME)



IC ICM H05B033-12

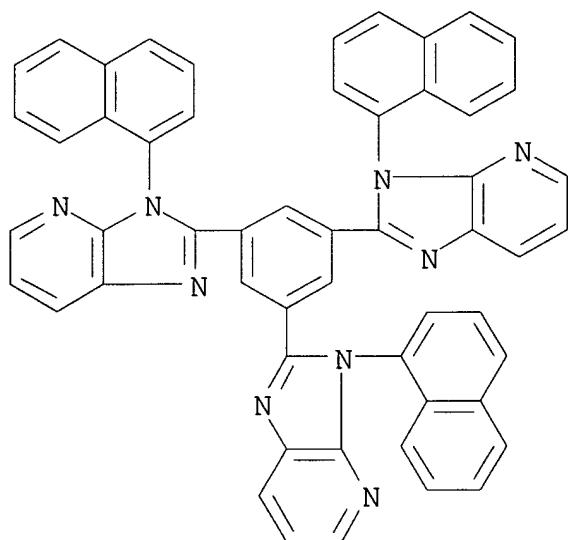
INCL 428690000; 428917000; 313504000; 313506000  
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 22, 76  
ST org **electroluminescent** device **electron transporting** material  
IT **Electroluminescent** devices  
(org. **electroluminescent** element using novel **electron transporting** material)  
IT Polyimides, uses  
(org. **electroluminescent** element using novel **electron transporting** material)  
IT 313950-73-1 328238-10-4 358974-66-0  
377092-02-9 377092-10-9 377092-13-2 714215-62-0  
(**electron transporting** material; org. **electroluminescent** element using novel **electron transporting** material)  
IT 7429-90-5, Aluminum, uses 7789-24-4, Lithium fluoride (LiF), uses 25067-59-8, Polyvinylcarbazole 50926-11-9, Indium tin oxide 94928-86-6, Tris(2-phenylpyridine)iridium 123847-85-8  
(org. **electroluminescent** element using novel **electron transporting** material)  
  
L35 ANSWER 5 OF 57 HCA COPYRIGHT 2005 ACS on STN  
141:79148 Organic **electroluminescent** element. Ise, Toshihiro; Igarashi, Tatsuya; Okada, Hisashi (Fuji Photo Film Co., Ltd., Japan). U.S. Pat. Appl. Publ. US 2004124769 A1 20040701, 45 pp. (English). CODEN: USXXCO. APPLICATION: US 2003-735700 20031216. PRIORITY: JP 2002-365281 20021217.  
AB The invention relates to an org. **electroluminescent** element comprising: a pair of electrodes; and an org. layer provided between the pair of electrodes, the org. layer comprising a **light-emitting** layer and an **electron transporting** layer, wherein the **light-emitting** layer contains at least 1 phosphorescence-emitting material and at least 1 metal complex functioning as a host material, and the **electron transporting** layer contains the compd. represented by  $L + \text{Parenopenst}; (A)_m$  wherein A represents a monovalent heterocyclic group wherein .gtoreq.2 arom. hetero rings are condensed, the heterocyclic groups represented by A is the same or different from each other, m represents an integer of .gtoreq.2, and L represents an m-valent linking group.  
IT 358974-66-0 428455-07-6  
(**electron transporting** material;  
phosphorescent org. **electroluminescent** device)  
RN 358974-66-0 HCA  
CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-

methylphenyl)- (9CI) (CA INDEX NAME)



RN 428455-07-6 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(1-naphthalenyl)- (9CI) (CA INDEX NAME)]



IC ICM H01J001-63

INCL 313504000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST org **electroluminescent** device phosphorescence host guest

IT **Electroluminescent** devices

Phosphorescent substances

(phosphorescent org. **electroluminescent** device)

IT **358974-66-0 428455-07-6**

(**electron transporting** material;

phosphorescent org. **electroluminescent** device)

IT 208187-75-1

(host material in **light emitting** layer;

phosphorescent org. **electroluminescent** device)

IT 94928-86-6, Tris(2-phenylpyridine)iridium

(phosphorescent guest material; phosphorescent org.

**electroluminescent** device)

L35 ANSWER 6 OF 57 HCA COPYRIGHT 2005 ACS on STN

140:329330 organic **electroluminescent** devices containing

transition metal complex. Igarashi, Tatsuya; Watanabe, Kohsuke

(Fuji Photo Film Co., Ltd., Japan). U.S. Pat. Appl. Publ. US

2004065544 A1 20040408, 17 pp. (English). CODEN: USXXCO.

APPLICATION: US 2003-670005 20030925. PRIORITY: JP 2002-287390

20020930.

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\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

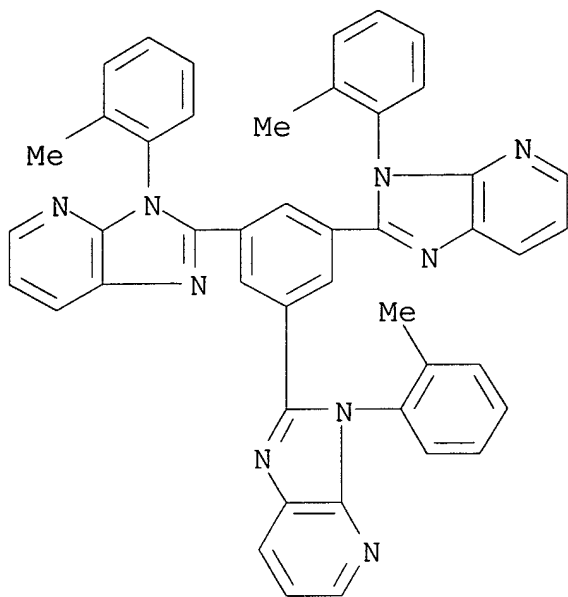
AB Org. **electroluminescent** devices are described described which comprise: a pair of electrodes; and at least one org. layer provided between the pair of electrodes, at least one of the at least one org. layer being a **light emitting** layer, where the **light-emitting** layer comprises a compd. represented by the formula (I), where R11 and R12 each represent a hydrogen atom or a substituent; Y11, Y12, and Y13 each represent a substituted or unsubstituted carbon atom, a substituted or unsubstituted nitrogen atom, an oxygen atom or a sulfur atom; M11 represents a transition metal ion; L11 represents a ligand; X11 represents a counter ion; n11 represents an integer of 1 to 3; n12 represents an integer of 0 to 4; and n13 represents an integer of 0 to 4; with proviso that a compd. in which R11 and R12 are connected together to form a porphyrin ring is excluded. A compd. represented by the formula (II) are discussed, where Y67 and Y68 each represents an oxygen atom, a sulfur atom, a quaternary carbon atom or a substituted or unsubstituted nitrogen atom; R61, R62, R63, R64, and R65 each represents a substituent; and n62, n63, n64, and n65 each represents an integer of 0 to 4.

IT **358974-66-0**

(org. **electroluminescent** devices contg. transition  
metal complex)

RN 358974-66-0 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-methylphenyl)- (9CI) (CA INDEX NAME)



IC ICM C09K011-06

INCL 204296000; 252301160

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 76, 78

ST transition metal complex org **electroluminescent** device  
OELD

IT Transition metal complexes

(org. **electroluminescent** devices contg. transition  
metal complex)

IT **Electroluminescent** devices

(org.; org. **electroluminescent** devices contg.  
transition metal complex)

IT 7429-90-5, Aluminum, uses 7440-22-4, Silver, uses 7789-24-4,  
Lithium fluoride, uses 50926-11-9, ITO 58328-31-7 65181-78-4,  
TPD 70673-65-3 **358974-66-0**

(org. **electroluminescent** devices contg. transition  
metal complex)

IT 15082-28-7 25067-59-8, Polyvinylcarbazole

(org. **electroluminescent** devices contg. transition  
metal complex)

IT 677751-50-7P



(org. **electroluminescent** devices contg. transition metal complex)

IT 7210-08-4 337526-84-8

(org. **electroluminescent** devices contg. transition metal complex)

L35 ANSWER 7 OF 57 HCA COPYRIGHT 2005 ACS on STN

140:312124 Organic **electroluminescent** element containing metal chelate complex having nitrogen-containing ring compound. Arakane, Takashi; Iwakuma, Toshihiro; Hosokawa, Chishio (Idemitsu Kosan Co., Ltd., Japan). PCT Int. Appl. WO 2004028217 A1 20040401, 78 pp. DESIGNATED STATES: W: CN, JP, KR, US; RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR. (Japanese). CODEN: PIXXD2. APPLICATION: WO 2003-JP11898 20030918. PRIORITY: JP 2002-275083 20020920.

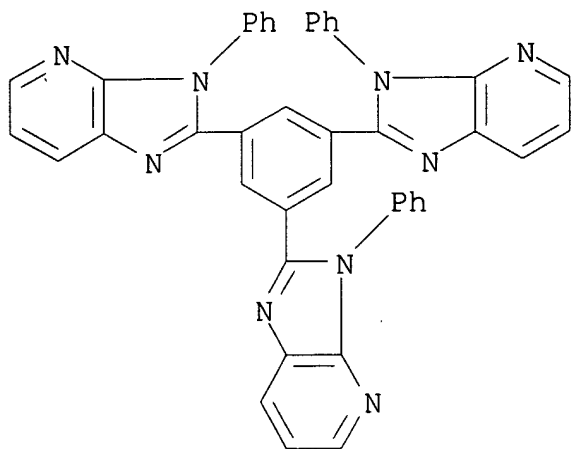
AB An org. **electroluminescent** element comprising a neg. electrode and a pos. electrode and, interposed between them, one or more org. thin film layers including a luminescent layer contg. at least a phosphorescent **luminous** compd., which **org** . **electroluminescent** element further comprises an electron injection layer bonded to the neg. electrode, the electron injection layer comprising as a main component at least one member selected from among metal chelate complexes of nitrogenous ring, nitrogenous 5-membered ring derivs., noncondensed nitrogenous 6-membered ring derivs. and condensed nitrogenous 6-membered ring derivs. having one carbon ring condensed and comprising as a reducing dopant at least one member selected from among alkali metals, alkali metal complexes, alkali metal compds., alk. earth metals, alk. earth metal complexes, alk. earth metal compds., rare earth metals, rare earth metal complexes and rare earth metal compds. This org. **electroluminescent** element realizes phosphorescent luminescence and exhibits high luminous efficiency and prolonged durability.

IT 313950-73-1

(org. **electroluminescent** element contg. metal chelate complex having nitrogen-contg. ring compd.)

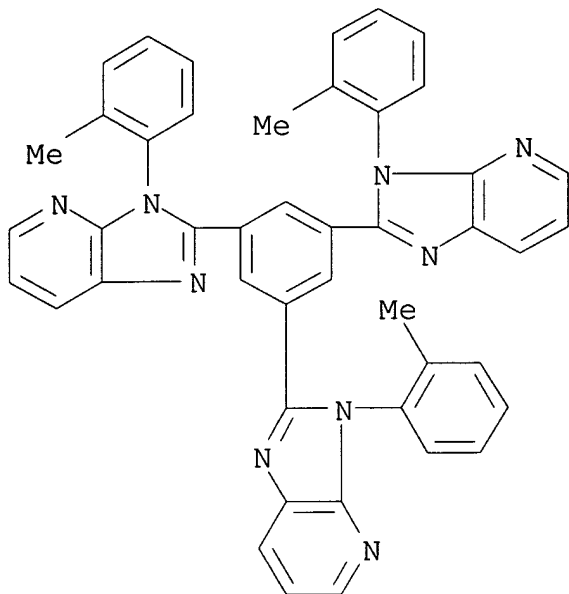
RN 313950-73-1 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-phenyl- (9CI) (CA INDEX NAME)



- IC ICM H05B033-22  
ICS H05B033-14
- CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 29, 73
- ST org **electroluminescent** element metal chelate complex  
nitrogen ring; optical imaging display device
- IT **Electroluminescent** devices  
Optical imaging devices  
(org. **electroluminescent** element contg. metal chelate complex having nitrogen-contg. ring compd.)
- IT 146162-54-1 192198-85-9 **313950-73-1** 387859-70-3  
504409-45-4 676345-55-4 676345-56-5  
(org. **electroluminescent** element contg. metal chelate complex having nitrogen-contg. ring compd.)
- L35 ANSWER 8 OF 57 HCA COPYRIGHT 2005 ACS on STN  
140:101806 Carbazole compounds, their polymers, and **light-emitting** elements using them with excellent blue **light emission**. Watanabe, Saisuke; Okada, Hisashi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004018787 A2 20040122, 27 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-179094 20020619.
- AB The compds. are 3-R1-6-R2-9-R3-substituted carbazole [R1,2 = (un)substituted 9-carbazolyl; R3 = H2C:CRX; R = H, substituent; X = single bond, divalent org. group].
- IT **358974-66-0**  
(**light-emitting** layer; carbazole compds. for host polymers for org. **electroluminescent** devices with good blue **light emission**)
- RN 358974-66-0 HCA  
CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-

methylphenyl)- (9CI) (CA INDEX NAME)



- IC ICM C08F026-12  
ICS C07D209-80; C07D209-88; C09K011-06; H05B033-14; H05B033-22
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 35, 38
- ST carbazole compd blue **light emission** efficiency;  
org **electroluminescent** device host polymer  
carbazolylcarbazole
- IT **Electroluminescent** devices  
(blue-emitting; carbazole compds. for host polymers for org.  
**electroluminescent** devices with good blue **light emission**)
- IT 37500-95-1P 606129-90-2P, 9,3':6',9''-Ter-9H-carbazole  
644979-46-4P 644979-50-0P  
(for monomer prepn.; carbazole compds. for host polymers for org.  
**electroluminescent** devices with good blue **light emission**)
- IT 86-74-8, Carbazole 98-53-3, 4-tert-Butylcyclohexanone 107-06-2,  
1,2-Dichloroethane, reactions 2039-82-9, 4-Bromostyrene  
6825-20-3, 3,6-Dibromocarbazole 61765-93-3, 4-tert-  
Butylphenylhydrazine  
(for monomer prepn.; carbazole compds. for host polymers for org.  
**electroluminescent** devices with good blue **light emission**)
- IT 155090-83-8, Baytron P  
(hole-transporting layer; carbazole compds. for host polymers for

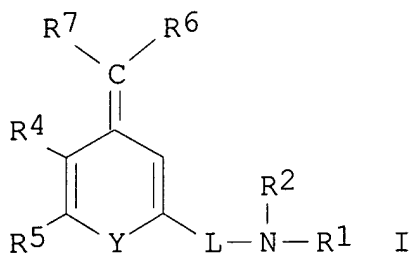
org. **electroluminescent** devices with good blue **light emission**)

- IT 351863-09-7 **358974-66-0** 370878-69-6 387859-70-3  
 (light-emitting layer; carbazole compds. for  
 host polymers for org. **electroluminescent** devices with  
 good blue **light emission**)
- IT 644979-58-8P 644979-60-2P 644979-62-4P  
 (light-emitting layer; carbazole compds. for  
 host polymers for org. **electroluminescent** devices with  
 good blue **light emission**)
- IT 644979-48-6P 644979-55-5P 644979-56-6P  
 (monomer; carbazole compds. for host polymers for org.  
**electroluminescent** devices with good blue **light**  
**emission**)

L35 ANSWER 9 OF 57 HCA COPYRIGHT 2005 ACS on STN

140:67425 Organic **electroluminescent** device with improved  
 brightness. Arai, Kazumi (Fuji Photo Film Co., Ltd., Japan). Jpn.  
 Kokai Tokkyo Koho JP 2004006074 A2 20040108, 36 pp. (Japanese).  
 CODEN: JKXXAF. APPLICATION: JP 2002-159050 20020531.

GI



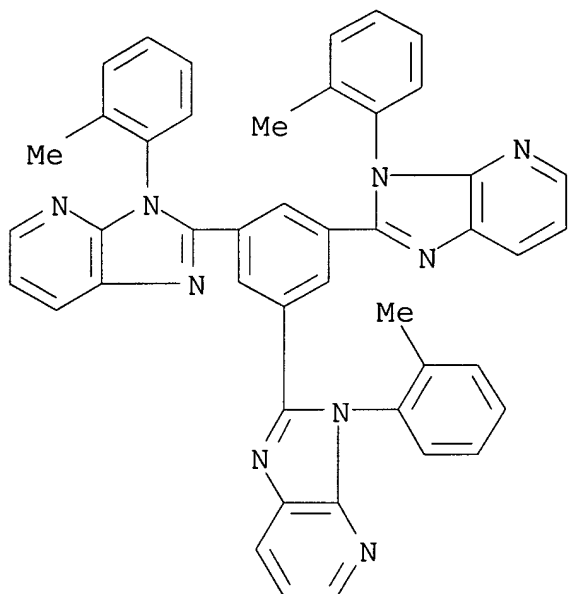
- AB The org. **EL** device has, between a pair of electrodes, a  
 luminescent layer or a plurality of org. layers involving a  
 luminescent layer contg. 1st luminescent material represented by a  
 general formula I (R1, R2 = aliph. hydrocarbyl, aryl, heterocyclic  
 group; R3-R5 = H, substituent; L = conjugated bond linkage; R1, R2,  
 and L may be bonded to each other and form ring; Y = oxygen, sulfur,  
 NRY; NRY = H, substituent; Rx, Ry = H, substituent; at least one of  
 R6 and R7 show electron-withdrawing group) and a 2nd luminescent  
 material which **emits light** of wavelength shorter  
 than that of I, preferably one represented by a general formula  
 which is substantially the same as that of I, except for that R2 is  
 H. The org. **EL** device has improved purity of red color  
 and excellent durability.

IT **358974-66-0**

(**electron-transporting** material; org.  
**electroluminescent** device with improved brightness,  
contg. mixt. of red-emitting phosphors)

RN 358974-66-0 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-methylphenyl)- (9CI) (CA INDEX NAME)



IC ICM H05B033-14

ICS C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST org **EL** device red emitting phosphor

IT **Electroluminescent** devices

(org. **electroluminescent** device with improved  
brightness, contg. mixt. of red-emitting phosphors)

IT Phosphors

(red-emitting; org. **electroluminescent** device with  
improved brightness, contg. mixt. of red-emitting phosphors)

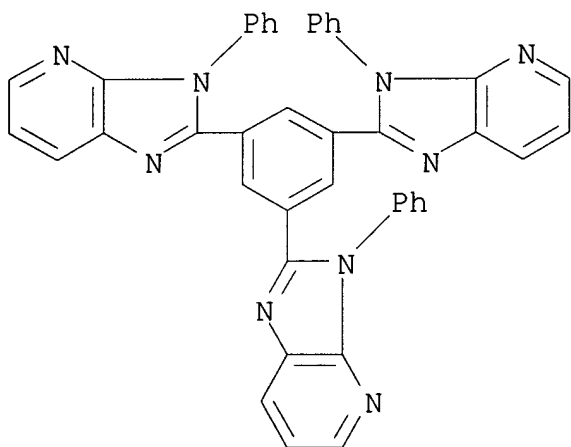
IT **358974-66-0**

(**electron-transporting** material; org.  
**electroluminescent** device with improved brightness,  
contg. mixt. of red-emitting phosphors)

IT 2085-33-8, Tris(8-hydroxyquinolinato)aluminum 65181-78-4,  
N,N'-Bis(3-methylphenyl)-N,N'-diphenylbenzidine 638222-61-4

(org. **electroluminescent** device with improved  
brightness, contg. mixt. of red-emitting phosphors)

- 140:10438 Organic **electroluminescent** devices with good durability and luminescence properties. Igarashi, Tatsuya (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003347056 A2 20031205, 16 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-157507 20020530.
- AB The org. **electroluminescent** (EL) device, useful for displays, lamps, scanners, etc., has between a pair of electrodes a **luminescence** layer or **org.** layers contg. it, wherein the luminescence layer contains .gtoreq.1 compds. Ar12Ar11Ar(Ar21Ar22)Ar31Ar32 (Ar11, Ar21, Ar31 = arylene; Ar12, Ar22, Ar32 = H, substituent; .gtoreq.1 of Ar11, Ar21, Ar31, Ar12, Ar22, Ar32 = group having condensed aryl structures other than pyrene or condensed heteroaryl structures; Ar = trivalent arom., arom. heteroring) and the org. layers contain styryl derivs. having .gtoreq.1 N.
- IT **313950-73-1**  
(org. **EL** devices with good durability and luminescence properties)
- RN 313950-73-1 HCA
- CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-phenyl- (9CI) (CA INDEX NAME)



- IC ICM H05B033-14  
ICS C09K011-06
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
- ST org **electroluminescent** device phenanthrylbenzene durability; styrylamine condensed arom triarylbenzene **EL** device
- IT **Electroluminescent** devices  
(org. **EL** devices with good durability and luminescence properties)
- IT 144810-07-1 151965-47-8, Phenanthrene, 9,9',9''-(1,3,5-

benzenetriyl)tris- **313950-73-1**

(org. **EL** devices with good durability and luminescence properties)

L35 ANSWER 11 OF 57 HCA COPYRIGHT 2005 ACS on STN

139:330082 Organic thin film **electroluminescent** device and production method. Nishida, Nobuhiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003297563 A2 20031017, 13 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2002-96412 20020329.

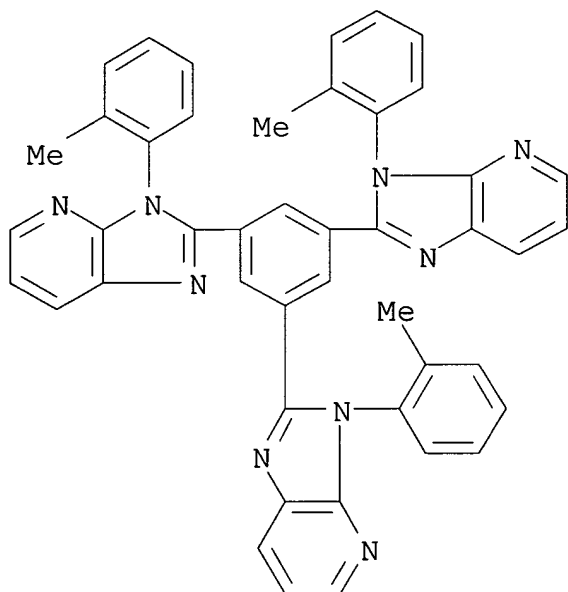
AB The invention refers to a prodn. method of an org. thin film **electroluminescent** device, suitable for use in full color displays, back lighting, planar light sources and light source arrays for printers, comprising a cathode, a **luminescent org.** layer and an anode, wherein an org. film formed on a temporary substrate via wet method, and transferred to the substrate by placing it over the cathode layer and heating, then removing the temporary substrate, in order to easily place the org. layer on the substrate and provide a uniform adhesive interface.

IT **358974-66-0**

(org. thin film **electroluminescent** device and prodn. method)

RN 358974-66-0 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-methylphenyl)- (9CI) (CA INDEX NAME)



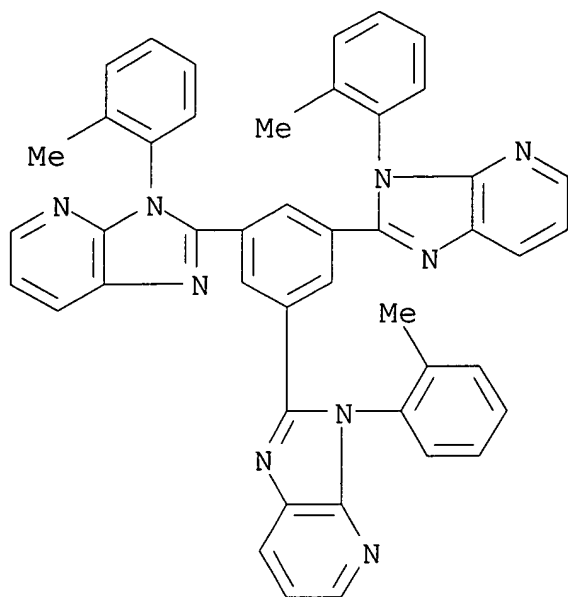
IC ICM H05B033-10

ICS B41J002-44; B41J002-45; B41J002-455; H05B033-14; H05B033-26

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related

Properties)  
ST thin film **electroluminescent** device transfer  
IT Polyvinyl butyrals  
    (org. thin film **electroluminescent** device and prodn.  
    method)  
IT **Electroluminescent** devices  
    (thin-film; org. thin film **electroluminescent** device  
    and prodn. method)  
IT 7429-90-5, Aluminum, uses 7789-24-4, Lithium fluoride, uses  
24964-91-8 25067-59-8, Poly vinyl carbazole 50926-11-9, ITO  
94928-86-6 173394-18-8 **358974-66-0**  
    (org. thin film **electroluminescent** device and prodn.  
    method)  
  
L35 ANSWER 12 OF 57 HCA COPYRIGHT 2005 ACS on STN  
139:299005 **Light-emitting** device. Mishima, Masayuki  
    (Japan). U.S. Pat. Appl. Publ. US 2003184221 A1 20031002, 9 pp.  
    (English). CODEN: USXXCO. APPLICATION: US 2003-400584 20030328.  
    PRIORITY: JP 2002-92323 20020328.  
AB An org. **electroluminescent** device comprising: a substrate;  
a cathode; at least one org. compd. layer including a **light**  
**-emitting** layer; and a transparent anode, in this order,  
wherein a reducing-compd. layer is located between the substrate and  
the cathode.  
IT **358974-66-0**  
    (**light-emitting** diode and its fabrication and  
    properties)  
RN 358974-66-0 HCA  
CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-  
methylphenyl)- (9CI) (CA INDEX NAME)





IC ICM H05B033-00  
 INCL 313512000  
 CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 ST **light emitting** device LED  
 IT Polyesters, uses  
 (Tetoron O; **light-emitting** diode and its fabrication and properties)  
 IT Alloys, uses  
 (alkali metal; **light-emitting** diode and its fabrication and properties)  
 IT Alkali metals, uses  
 (alloys; **light-emitting** diode and its fabrication and properties)  
 IT **Electroluminescent** devices  
 (**light-emitting** diode and its fabrication and properties)  
 IT Alkali metals, uses  
 Rare earth alloys  
 Rare earth metals, uses  
 (**light-emitting** diode and its fabrication and properties)  
 IT Calcium alloy, base  
 Cerium alloy, base  
 Cesium alloy, base  
 Erbium alloy, base  
 Gadolinium alloy, base

Hafnium alloy, base  
 Lanthanum alloy, base  
 Lithium alloy, base  
 Magnesium alloy, base  
 Neodymium alloy, base  
 Potassium alloy, base  
 Rubidium alloy, base  
 Samarium alloy, base  
 Scandium alloy, base  
 Ytterbium alloy, base  
 Yttrium alloy, base  
 Zinc alloy, base

(**light-emitting** diode and its fabrication and properties)

IT 25038-59-9, Tetoron O, uses

(Tetoron O; **light-emitting** diode and its fabrication and properties)

IT 1345-25-1, Iron oxide feo, uses 7429-90-5, Aluminum, uses 7439-91-0, Lanthanum, uses 7439-93-2, Lithium, uses 7439-95-4, Magnesium, uses 7440-00-8, Neodymium, uses 7440-09-7, Potassium, uses 7440-17-7, Rubidium, uses 7440-19-9, Samarium, uses 7440-20-2, Scandium, uses 7440-45-1, Cerium, uses 7440-46-2, Cesium, uses 7440-52-0, Erbium, uses 7440-53-1, Europium, uses 7440-54-2, Gadolinium, uses 7440-58-6, Hafnium, uses 7440-64-4, Ytterbium, uses 7440-65-5, Yttrium, uses 7440-66-6, Zinc, uses 7440-70-2, Calcium, uses 7789-24-4, Lithium fluoride, uses 20619-16-3, Germanium oxide geo 21651-19-4, Tin oxide sno 50926-11-9, Indium tin oxide 58328-31-7 94928-86-6, Tris(2-phenylpyridine)iridium 113443-18-8, Silicon monoxide 123847-85-8 **358974-66-0**

(**light-emitting** diode and its fabrication and properties)

L35 ANSWER 13 OF 57 HCA COPYRIGHT 2005 ACS on STN

139:283129 Organic thin-film device and its production method.

Tateishi, Tomomi (Fuji Photo Film Co., Ltd., Japan). PCT Int. Appl. WO 2003079734 A1 20030925, 53 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2003-JP3331 20030319. PRIORITY: JP 2002-79123 20020320.

AB A method of fabricating an org. thin-film (e.g., org. LED) device is described entailing (a) heating and/or pressing a transfer material

having an org. thin-film layer formed on a temporary support and a 1st laminate comprising a substrate and at least a transparent conductive layer or a rear-surface electrode formed on the substrate, which are overlapped each other such that the org. thin-film layer of the transfer material faces a receiving surface of the 1st laminate, thereby forming a laminate structure; (b) peeling the temporary support from the laminate structure to transfer the org. thin-film layer to the receiving surface of the 1st laminate; and (c) bonding a 2nd laminate comprising a substrate and at least a rear-surface electrode or a transparent conductive layer formed on the substrate to the org. thin-film layer transferred onto the 1st laminate.

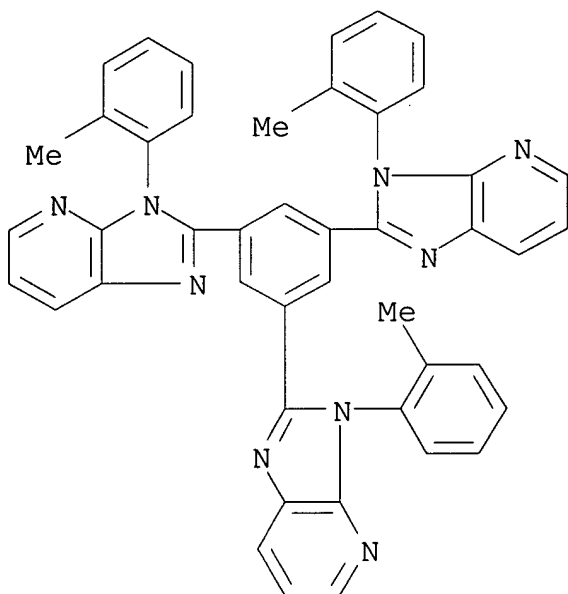
IT 358974-66-0

(**electron-transporting** material; org.

thin-film device fabricated by using transfer layer having org. film layer)

RN 358974-66-0 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-methylphenyl)- (9CI) (CA INDEX NAME)



IC ICM H05B033-10

ICS H01L051-20

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 76

IT Polyvinyl butyrals

(**electron-transporting** material; org.

thin-film device fabricated by using transfer layer having org.

film layer)

IT **Electroluminescent** devices

Films

Semiconductor device fabrication

(org. thin-film device fabricated by using transfer layer having org. film layer)

IT **358974-66-0**

(**electron-transporting** material; org.

thin-film device fabricated by using transfer layer having org. film layer)

IT 25067-59-8, Polyvinyl carbazole 94928-86-6, Tris(2-phenylpyridine)iridium

(**light-emitting** layer; org. thin-film device

fabricated by using transfer layer having org. film layer)

L35 ANSWER 14 OF 57 HCA COPYRIGHT 2005 ACS on STN

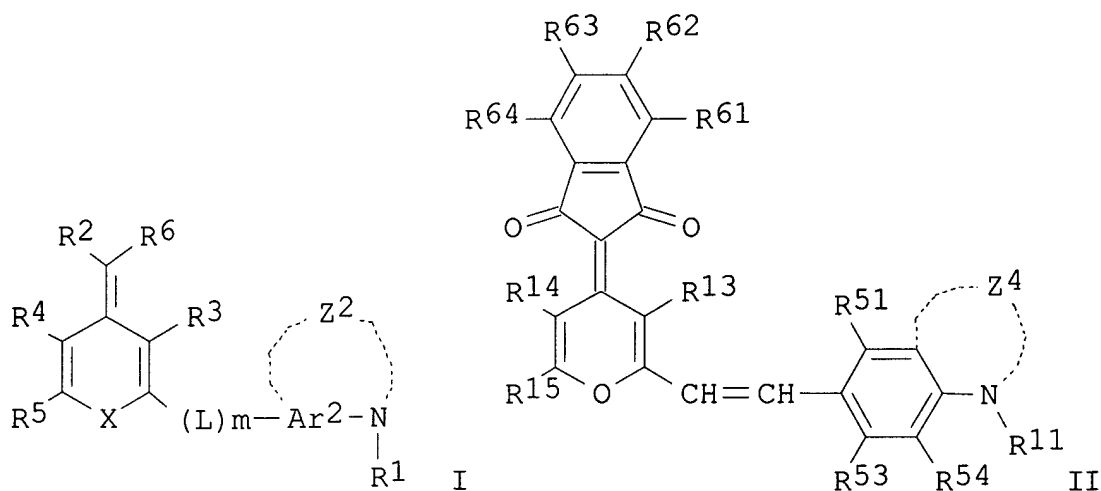
139:221339 Organic **electroluminescent** devices. Arai, Kazumi

(Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP

2003243177 A2 20030829, 19 pp. (Japanese). CODEN: JKXXAF.

APPLICATION: JP 2002-38495 20020215.

GI



AB He devices comprise a pair of electrodes interposing an org. **electroluminescent** laminate contg. a phosphor layer comprising I or II (R1 =aliph. hydrocarbon; R3-5 = H, substituent; X = O, S, N-R6; R2 = H, substituent; R2, R6 = H, substituent; L = linking group having conjugated bond: m = 0, 3; Ar2 = aryl, heteroaryl; Z2 = ring with Ar2-N, alkynylene; Z2 does not form aryl

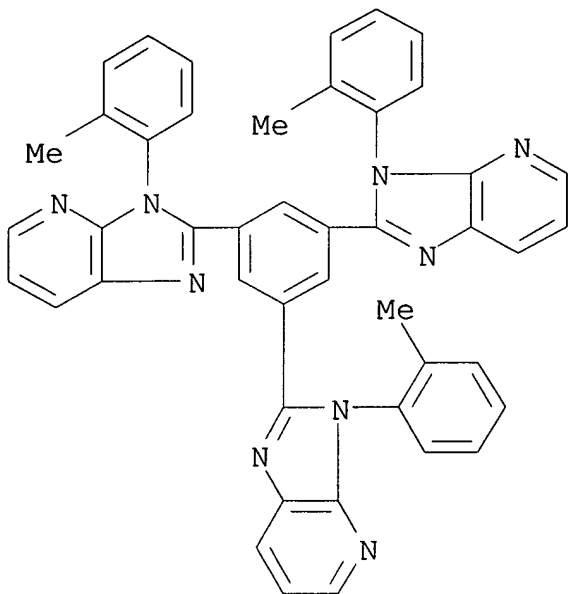
group; R11 = C1-20 alkyl; R13,14 = H, C1-6 alkyl; R15 = C1-20 alkyl, C6-20 aryl, C1-20 heteroaryl; R51,53,54 = H, C1-6 alkyl, C1-6 alkoxy; R61-64 = H, C1-20 alkyl, C6-20 aryl, C2-20 heterocyclic, halo; R61,62, R62,63, R63,64 may form 5-6 member ring; Z4 = contg. alkenylene, may form 5-6 member ring with ortho-C in aniline N; Z4 does not form aryl group).

IT **358974-66-0**

(structure and properties of org. **electroluminescent** devices)

RN 358974-66-0 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-methylphenyl)- (9CI) (CA INDEX NAME)



IC ICM H05B033-14

ICS C07D405-06; C09K011-06

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST org **electroluminescent** device phosphor

IT **Electroluminescent** devices

Fluorescence

Phosphors

Thermal stability

(structure and properties of org. **electroluminescent** devices)

IT Polycarbonates, uses

(structure and properties of org. **electroluminescent** devices)

IT 2085-33-8, Tris(8-quinolinolato)aluminum 123847-85-8,

[1,1'-Biphenyl]-4,4'-diamine, N,N'-di-1-naphthalenyl-N,N'-diphenyl-  
349666-25-7 **358974-66-0** 586959-04-8 586959-05-9

(structure and properties of org. **electroluminescent**  
devices)

L35 ANSWER 15 OF 57 HCA COPYRIGHT 2005 ACS on STN

139:157123 **Electroluminescent** device containing heterocyclic  
compound with condensed aromatic rings. Okada, Hisashi (Fuji Photo  
Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003217856 A2  
20030731, 38 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP  
2002-10167 20020118.

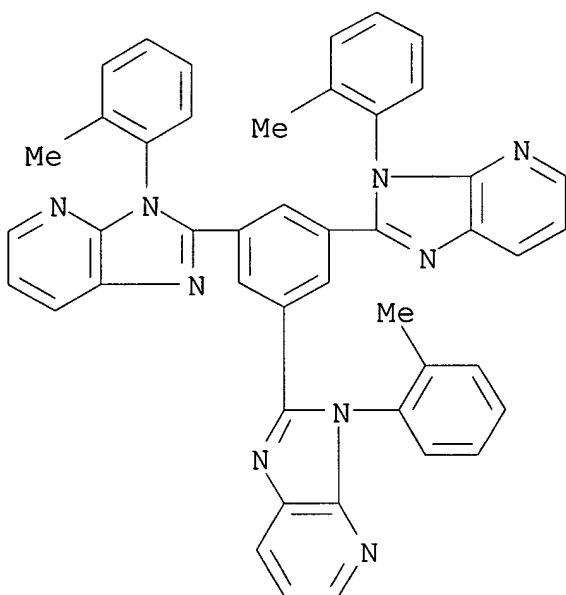
AB The invention refers to an **electroluminescent** device  
comprising at least one compd. L(A)m [ A = two or more arom. rings  
condensed on a heterocyclic ring; m < 2; L = bridging group].

IT **358974-66-0 377092-10-9 428455-07-6**  
**569682-34-4**

(**electroluminescent** device contg. heterocyclic compd.  
with condensed arom. rings)

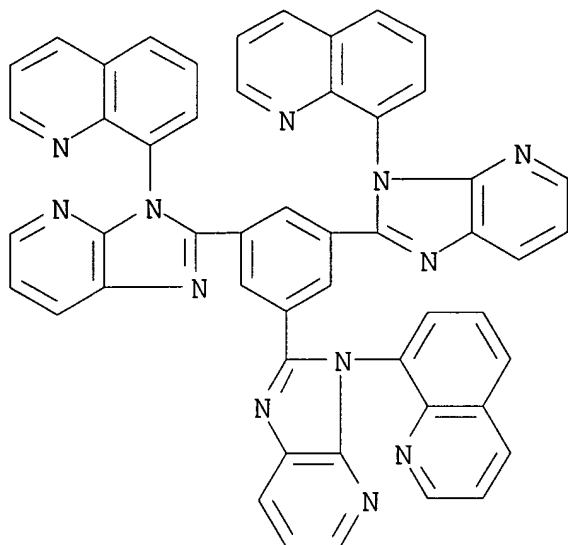
RN 358974-66-0 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-  
methylphenyl)- (9CI) (CA INDEX NAME)



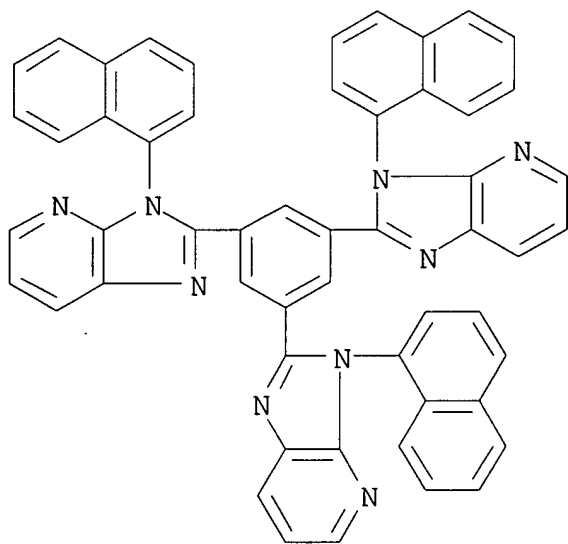
RN 377092-10-9 HCA

CN Quinoline, 8,8',8''-[1,3,5-benzenetriyltris(3H-imidazo[4,5-  
b]pyridine-2,3-diyl)]tris- (9CI) (CA INDEX NAME)



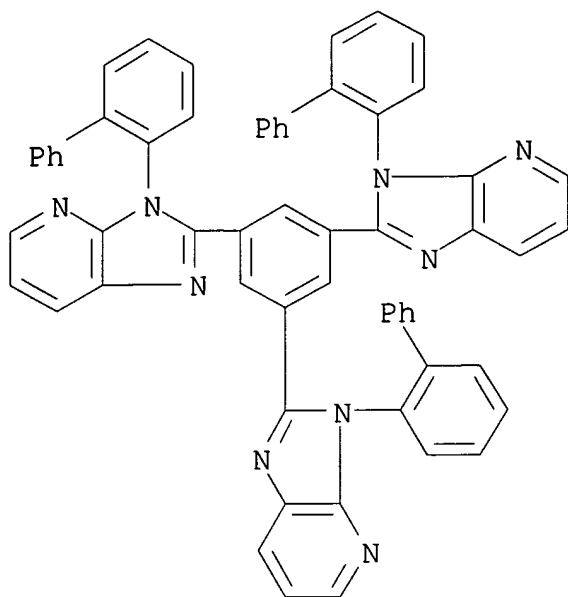
RN 428455-07-6 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(1-naphthalenyl)- (9CI) (CA INDEX NAME)



RN 569682-34-4 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-[1,1'-biphenyl]-2-yl]- (9CI) (CA INDEX NAME)

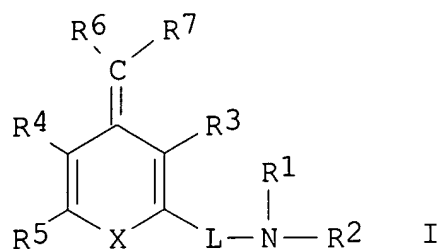


IC ICM H05B033-14  
ICS C09K011-06; H05B033-22  
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
ST **electroluminescent** device heterocyclic condensed arom  
**electron transport**  
IT **Electroluminescent** devices  
**Electron transport**  
(**electroluminescent** device contg. heterocyclic compd.  
with condensed arom. rings)  
IT **358974-66-0 377092-10-9 377092-14-3**  
**428455-07-6 569682-33-3 569682-34-4**  
(**electroluminescent** device contg. heterocyclic compd.  
with condensed arom. rings)

L35 ANSWER 16 OF 57 HCA COPYRIGHT 2005 ACS on STN  
139:108398 Organic **electroluminescent** devices. Arai, Kazumi  
(Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP  
2003197376 A2 20030711, 41 pp. (Japanese). CODEN: JKXXAF.  
APPLICATION: JP 2001-399915 20011228.

GI





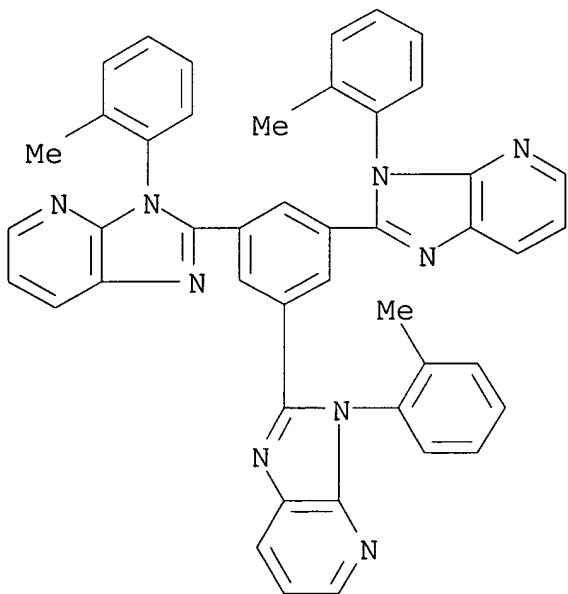
AB The devices comprise a phosphor layer comprising .gtoreq.1 selected from Ar<sub>2</sub>-Ar<sub>1</sub>-Ar<sub>3</sub> (Ar<sub>1</sub> = allylene, hetero-allylene; Ar<sub>2,3</sub> = aryl, heteroaryl) and I (R<sub>1-5</sub> = H, substituent; X = O, S, N - RY<sub>1</sub>; RY<sub>1</sub> = H, substituent; L = conjugated bond; R<sub>6</sub>, R<sub>7</sub> = H, substituent contg. electron donor).

IT **358974-66-0**

(structure and properties of org. **electroluminescent** devices)

RN 358974-66-0 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-methylphenyl)- (9CI) (CA INDEX NAME)



IC ICM H05B033-14

ICS C09K011-06; H05B033-22

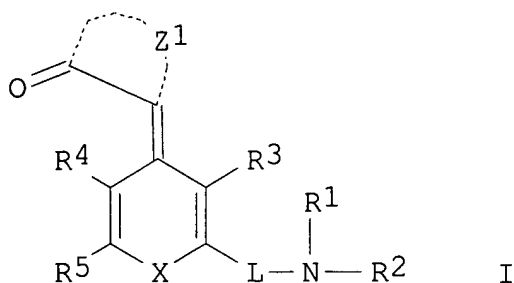
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST org **electroluminescent** device

- IT **Electroluminescent** devices  
Electron donors  
Luminescent substances  
Phosphors  
Substituent effects  
(structure and properties of org. **electroluminescent** devices)
- IT Polycarbonates, uses  
(structure and properties of org. **electroluminescent** devices)
- IT 2085-33-8, Tris(8-quinolinolato)aluminum 15082-28-7, PBD  
51325-91-8, DCM  
(structure and properties of org. **electroluminescent** devices)
- IT 7704-34-9, Sulfur, properties 12385-13-6, Hydrogen atom, properties 17778-80-2, Oxygen atom, properties 65181-78-4, TPD  
183748-02-9, Electron 251360-53-9 255709-81-0  
**358974-66-0**  
(structure and properties of org. **electroluminescent** devices)

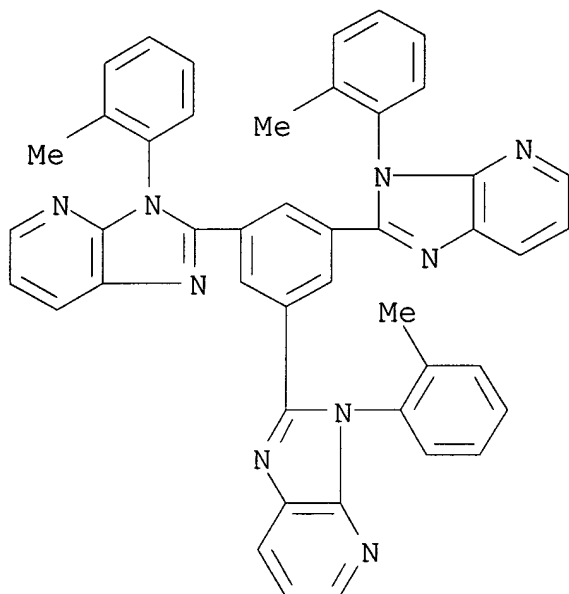
L35 ANSWER 17 OF 57 HCA COPYRIGHT 2005 ACS on STN  
139:92461 Organic **electroluminescent** devices. Arai, Kazumi  
(Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP  
2003193044 A2 20030709, 20 pp. (Japanese). CODEN: JKXXAF.  
APPLICATION: JP 2001-400341 20011228.

GI



- AB The devices comprise a phosphor layer contg. I (R1-5 = H, substituent; R1 and/or R2 = aliph. hydrocarbon contg. >6 C; R1 and R2 may form 5-7 member ring and with L form 5-6 member ring; X = O, S, N-RY1; RY1 = H, substituent; L = conjugate bond; Z1 = atoms for forming 5-6 member ring).
- IT **358974-66-0**  
(structure and properties of org. **electroluminescent** devices)

RN 358974-66-0 HCA  
 CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-methylphenyl)- (9CI) (CA INDEX NAME)



IC ICM C09K011-06  
 ICS C07D309-34; C07D405-06; C09B023-00; H05B033-14; H05B033-22  
 CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 ST org **electroluminescent** device  
 IT Electrodes  
     **Electroluminescent** devices  
     Phosphors  
         (structure and properties of org. **electroluminescent** devices)  
 IT 2085-33-8, Tris(8-quinolinolato)aluminum 50926-11-9, ITO  
 65181-78-4, TPD **358974-66-0** 556815-30-6 556815-32-8  
 556815-33-9 556815-34-0 556815-36-2 556815-38-4  
     (structure and properties of org. **electroluminescent** devices)

L35 ANSWER 18 OF 57 HCA COPYRIGHT 2005 ACS on STN  
 139:60536 Transfer material of organic thin-film device and manufacture of organic thin-film device by using the same. Tateishi, Tomomi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003178868 A2 20030627, 12 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-334858 20011031. PRIORITY: JP 2001-305429 20011001.

AB The transfer material consists of a temporary support having thereon

.gtoreq.1 org. thin-film layers which are to be transferred to a substrate by laminating and heating and/or pressurizing, the surface roughness of the temporal support has the max. height Rmax (JIS B 0601-1982) .ltoreq.50 per 100 of the thickness of the org. thin-film layer, thereby offering good interfacial adhesion between the transferred org. thin-film layer and a device substrate. Preferably, the org. thin-film layer contains at least a luminescent compd. and./or a carrier-transporting compd. In the manuf. of the org. thin-film device, and from the substrate side, a hole-transporting org. thin-film layer, a **luminescent org.** thin-film layer, and an **electron-transporting** org. thin-film layer are transferred in this order. The substrate may consist of a substrate support having thereon a transparent elec. conductive film.

IT 358974-66-0

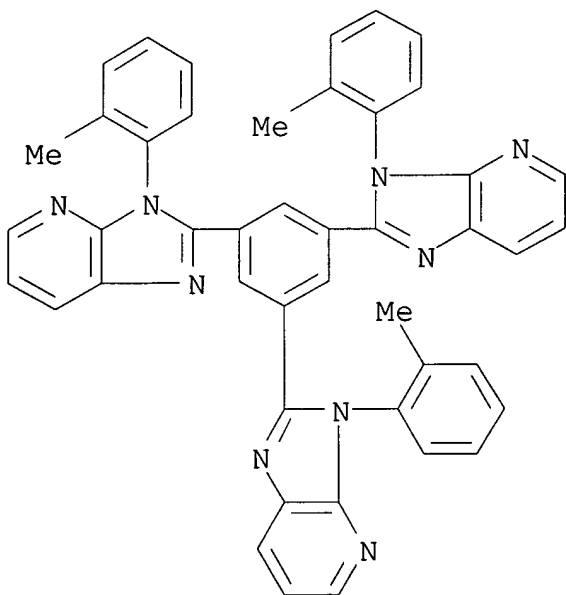
(**electron-transporting** layer; manuf. of org.

**E1** device by using transfer material composed of org.

thin-film device supported on temporal support)

RN 358974-66-0 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-methylphenyl)- (9CI) (CA INDEX NAME)



IC ICM H05B033-10

ICS H05B033-14

CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST org thin film device manuf transfer material; transfer film org **electroluminescent** device

- IT **Electroluminescent** devices  
(manuf. of org. **E1** device by using transfer material  
composed of org. thin-film device supported on temporal support)
- IT Polysulfones, uses  
(polyether-, temporal support; manuf. of org. **E1** device  
by using transfer material composed of org. thin-film device  
supported on temporal support)
- IT Polyethers, uses  
(polysulfone-, temporal support; manuf. of org. **E1**  
device by using transfer material composed of org. thin-film  
device supported on temporal support)
- IT Polycarbonates, uses  
Polyesters, uses  
(temporal support; manuf. of org. **E1** device by using  
transfer material composed of org. thin-film device supported on  
temporal support)
- IT **358974-66-0**  
(**electron-transporting** layer; manuf. of org.  
**E1** device by using transfer material composed of org.  
thin-film device supported on temporal support)
- IT 155090-83-8, Baytron P 173394-18-8  
(hole-transporting layer; manuf. of org. **E1** device by  
using transfer material composed of org. thin-film device  
supported on temporal support)
- IT 94928-86-6, Tris(2-phenylpyridine)iridium  
(luminescent layer; manuf. of org. **E1** device by using  
transfer material composed of org. thin-film device supported on  
temporal support)
- IT 25038-59-9, Lumirror T 60, uses  
(temporal support; manuf. of org. **E1** device by using  
transfer material composed of org. thin-film device supported on  
temporal support)
- IT 50926-11-9, ITO  
(transparent electrode; manuf. of org. **E1** device by  
using transfer material composed of org. thin-film device  
supported on temporal support)

L35 ANSWER 19 OF 57 HCA COPYRIGHT 2005 ACS on STN

138:278144 Organic **electroluminescent** devices. Arai, Kazumi;  
Okada, Hisashi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai  
Tokkyo Koho JP 2003109766 A2 20030411, 30 pp. (Japanese). CODEN:  
JKXXAF. APPLICATION: JP 2002-202718 20020711. PRIORITY: JP  
2001-219910 20010719.

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

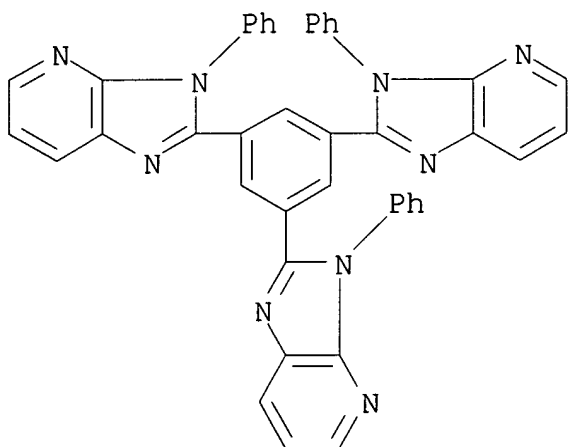
AB The devices comprise a pair of excitation electrodes interposing an org. phosphor transmitting a singlet light and contg. I, II and III (R1-5, R31-34, R41-44, R45, R46 = H, substituent; X = O, S, N-RY1; RY1 = H, substituent; L = conjugate group, linkage group; Z1,2 = 5 or 6 member ring; L21, L22 = (substituted) methine, N; n = 0-3).

IT **313950-73-1**

(structure and property of org. **electroluminescent** devices)

RN 313950-73-1 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-phenyl- (9CI) (CA INDEX NAME)



IC ICM H05B033-14

ICS C09K011-06

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST structure property org **electroluminescent** device

IT Electrodes

Excited state

Luminescent substances

Optical absorption

Substituent effects

(structure and property of org. **electroluminescent** devices)

IT 2085-33-8, Tris(8-quinolinolato)aluminum 50926-11-9, ITO

65181-78-4, TPD 200052-70-6, DCJTB 251360-53-9

**313950-73-1** 503474-38-2

(structure and property of org. **electroluminescent** devices)

IT 517-51-1, Rubrene

(structure and property of org. **electroluminescent** devices)

devices)

L35 ANSWER 20 OF 57 HCA COPYRIGHT 2005 ACS on STN

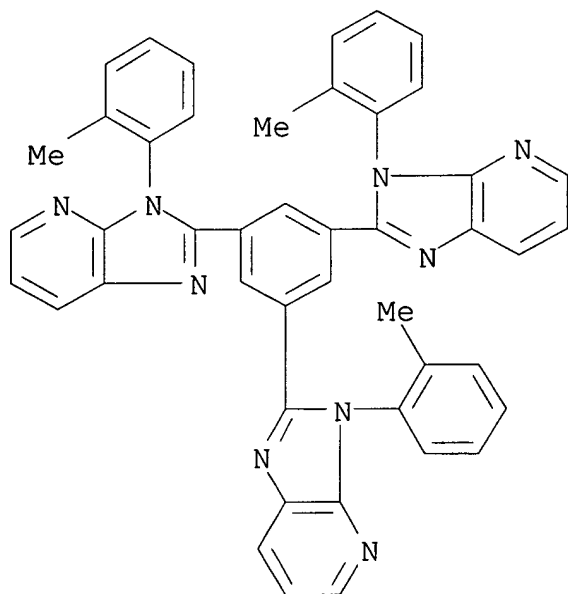
138:278133 Organic **electroluminescent** devices. Mishima, Masayuki (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003100448 A2 20030404, 9 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-291392 20010925.

AB The devices comprise: a glass substrate; a H<sub>2</sub>O barrier layer comprising a hydrophilic polymer binder contg.  $\geq 1$  H<sub>2</sub>O absorber; an ITO electrode; a hole transport, a phosphor, an **electron transport** and a metal electrode layer, where the H<sub>2</sub>O absorber layer comprises MgO, CaO, SrO and/or BaO.

IT **358974-66-0**, 2,2',2''-(1,3,5-Benzenetriyl)tris[3-(2-methylphenyl)-3H-imidazo[4,5-b]pyridine] (structure and properties of org. **electroluminescent** devices)

RN 358974-66-0 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-methylphenyl)- (9CI) (CA INDEX NAME)



IC ICM H05B033-04

ICS H05B033-14

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST org **electroluminescent** device hydrophilic desiccant

IT Absorbents

Absorption

Absorption apparatus

Binders

Electrodes

**Electroluminescent** devices**Electron transport**

Glass substrates

Hole transport

Humidity

Phosphors

(structure and properties of org. **electroluminescent** devices)

IT Polymers, uses

(structure and properties of org. **electroluminescent** devices)

IT Electrodes

(transparent; structure and properties of org. **electroluminescent** devices)

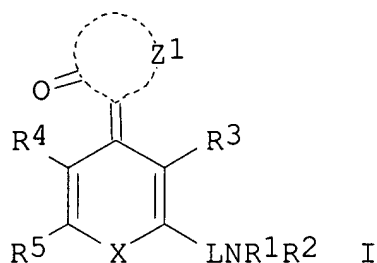
IT 1304-28-5, Barium oxide (BaO), uses 1305-78-8, Calcium oxide (CaO), uses 1309-48-4, Magnesium oxide (MgO), uses 1314-11-0, Strontium oxide (SrO), uses 7732-18-5, Water, uses 37271-44-6 50926-11-9, ITO 58328-31-7 65181-78-4, TPD 94928-86-6 123847-85-8, .alpha.-NPD **358974-66-0**, 2,2',2''-(1,3,5-Benzenetriyl)tris[3-(2-methylphenyl)-3H-imidazo[4,5-b]pyridine] (structure and properties of org. **electroluminescent** devices)

L35 ANSWER 21 OF 57 HCA COPYRIGHT 2005 ACS on STN

138:144848 Pyranindenedione derivatives and organic

**electroluminescent** device using them. Arai, Kazumi; Okada, Hisashi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003036976 A2 20030207, 24 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-219911 20010719.

GI



AB The title derivs. are described by I (R1-5 = H or substituents; X = O, S, or NR6; R6 = H or substituents; L = a conjugated moiety; Z1 = 5- or 6-membered ring moiety; I can be a metal complex).



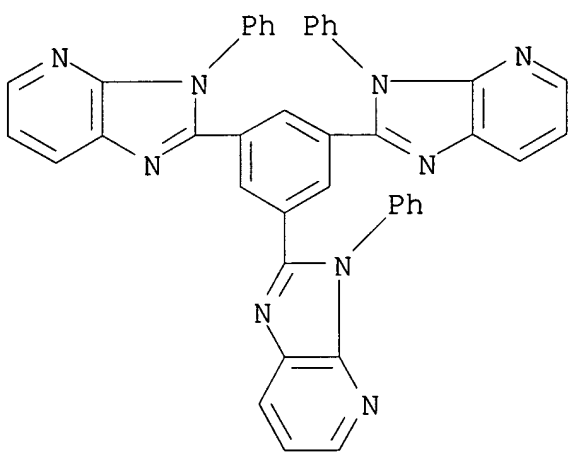
**Light-emitting** layer comprises .gtoreq.1 I and .gtoreq.1 triplet **light-emitting**/host materials; wherein the triplet **light-emitting** materials contain overlapping emitting spectra and I of energy transferring materials.

IT **313950-73-1**

(**electroluminescent** device and pyranindenedione compds. useable in them)

RN 313950-73-1 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-phenyl- (9CI) (CA INDEX NAME)



IC ICM H05B033-14

ICS C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 28, 76

ST pyranindenedione heterocyclic deriv **electroluminescent** device

IT Heterocyclic compounds

(**electroluminescent** device and pyranindenedione compds. useable in them)

IT **Electroluminescent** devices

(pyranindenedione compds. for)

IT 94928-86-6 **313950-73-1** 370878-69-6 494767-60-1

(**electroluminescent** device and pyranindenedione compds. useable in them)

L35 ANSWER 22 OF 57 HCA COPYRIGHT 2005 ACS on STN

137:360136 **Electroluminescent** device with aryl ring and amine compounds. Igarashi, Tatsuya (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002324678 A2 **20021108**, 33 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-129572 20010426.

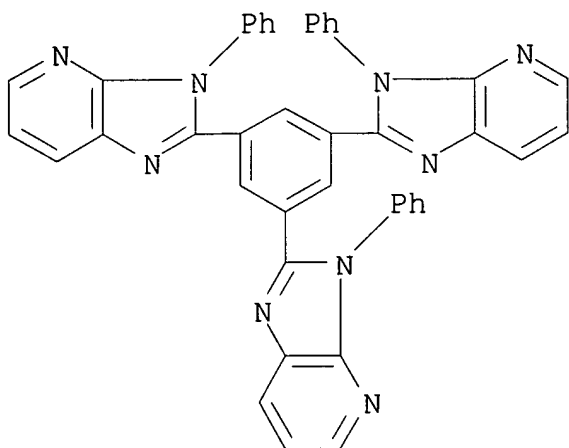
AB The invention refers to an **electroluminescent** device comprising an amine compd. with at least two rings and the compd. Ar(Ar11Ar12)(Ar21Ar22)(Ar31Ar32) [Ar = aryl or heteroaryl; Ar11,21,31 = arylene; Ar12,22,32 = H or substituent; where at least one of Ar11-32 is a condensed ring aryl or heteroaryl] in the luminescent layer.

IT **313950-73-1**

(**electroluminescent** device with aryl ring and amine compds.)

RN 313950-73-1 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-phenyl- (9CI) (CA INDEX NAME)



IC ICM H05B033-14

ICS C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST **electroluminescent** device amine arylene

IT **Electroluminescent** devices

(**electroluminescent** device with aryl ring and amine compds.)

IT **313950-73-1**

(**electroluminescent** device with aryl ring and amine compds.)

IT 58328-31-7P 123847-85-8P, NPD 151965-47-8P 349666-25-7P

349666-26-8P 349666-27-9P 349666-28-0P 349666-29-1P

349669-77-8P 349669-79-0P 349669-81-4P

(**electroluminescent** device with aryl ring and amine compds.)

IT 90-44-8, 9(10H)-Anthracenone 626-39-1, 1,3,5-Tribromobenzene

636-28-2, 1,2,4,5-Tetrabromobenzene 7511-49-1 68572-88-3

349666-24-6 474502-16-4

(**electroluminescent** device with aryl ring and amine

compds.)  
IT 349666-30-4P 474302-40-4P  
(**electroluminescent** device with aryl ring and amine  
compds.)

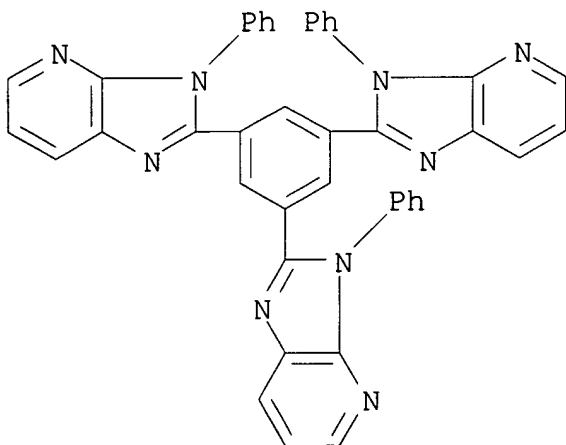
L35 ANSWER 23 OF 57 HCA COPYRIGHT 2005 ACS on STN  
137:343735 **Electroluminescent** device with arylene derivatives.  
Igarashi, Tatsuya (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai  
Tokkyo Koho JP 2002324677 A2 **20021108**, 24 pp. (Japanese).  
CODEN: JKXXAF. APPLICATION: JP 2001-129571 20010426.

AB The invention refers to an **electroluminescent** device  
comprising at least two arylene derivs.  
N(Ar11Ar12)(Ar21Ar22)(Ar31Ar32) [Ar11,21,31 = arylene; Ar12,22,32 =  
substituent or H; and at least one of Ar11,21,31,12,22,32 is a  
condensed aryl or heteroaryl; Ar = arylene or heteroarylene] in the  
luminescent layer.

IT **313950-73-1**  
(**electroluminescent** device with arylene derivs.)

RN 313950-73-1 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-  
phenyl- (9CI) (CA INDEX NAME)



IC ICM H05B033-14

ICS C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related  
Properties)

ST arylene hetero **electroluminescent** device

IT **Electroluminescent** devices

(**electroluminescent** device with arylene derivs.)

IT 247575-24-2 **313950-73-1** 349666-32-6 474302-39-1

(**electroluminescent** device with arylene derivs.)

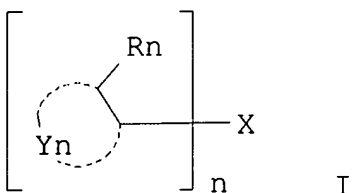
IT 7059-70-3P 151965-47-8P 349666-25-7P 349666-26-8P

349666-27-9P 349666-28-0P 349666-29-1P 349666-31-5P

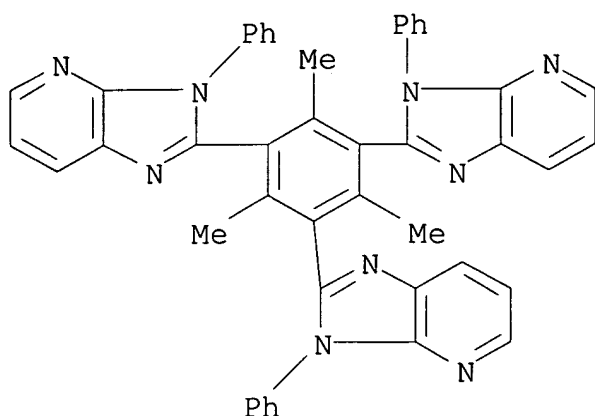
- (**electroluminescent** device with arylene derivs.)  
 IT 90-44-8, Anthrone 626-39-1, 1,3,5-Tribromobenzene 636-28-2,  
 1,2,4,5-Tetrabromobenzene 68572-88-3 349666-24-6  
 (**electroluminescent** device with arylene derivs.)  
 IT 349666-30-4P 474302-40-4P  
 (**electroluminescent** device with arylene derivs.)

L35 ANSWER 24 OF 57 HCA COPYRIGHT 2005 ACS on STN  
 137:317668 **Electron-transporting** cyclic compound and  
**electroluminescent** device using it. Taguchi, Toshiki (Fuji  
 Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002308855  
 A2 **20021023**, 22 pp. (Japanese). CODEN: JKXXAF.  
 APPLICATION: JP 2001-107307 20010405.

GI



- AB The **electroluminescent** device uses .gtoreq.1 cyclic compd.  
 I (X = electron-deficient' arom. heterocycle- group; Yn = at. group  
 to form .gtoreq.3-membered ring group; Rn = H, substituent; n  
 .gtoreq.1). The device shows high emission and improved durability  
 in repeated use.  
 IT **471911-33-8**  
 (**electron-transporting** cyclic compd. for  
**electroluminescent** device with improved durability)  
 RN 471911-33-8 HCA  
 CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(2,4,6-trimethyl-1,3,5-  
 benzenetriyl)tris[3-phenyl- (9CI) (CA INDEX NAME)



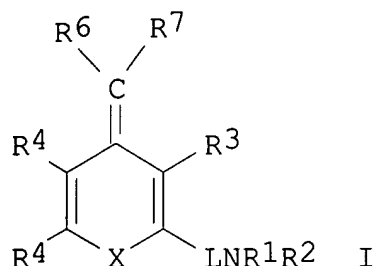
- IC ICM C07D235-18  
 ICS C07D241-12; C07D251-24; C07D263-56; C07D271-06; C07D271-10;  
 C07D285-12; C07D401-14; C07D417-14; C07D519-00; C09K011-06;  
 H05B033-14; H05B033-22
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
- ST **electron transporting** cyclic compd  
**electroluminescent** device; **EL** device  
**electron transporting** cyclic compd
- IT **Electroluminescent** devices  
 (hole-transporting cyclic compd. for **electroluminescent** device with improved durability)
- IT 471911-30-5P  
 (**electron-transporting** cyclic compd. for **electroluminescent** device with improved durability)
- IT 471911-31-6 471911-32-7 **471911-33-8** 471911-34-9  
 471911-35-0 471911-36-1  
 (**electron-transporting** cyclic compd. for **electroluminescent** device with improved durability)
- IT 947-84-2, 2-Phenylbenzoic acid 10034-93-2, Hydrazine sulfate  
 (**electron-transporting** cyclic compd. for **electroluminescent** device with improved durability)

L35 ANSWER 25 OF 57 HCA COPYRIGHT 2005 ACS on STN

137:301832 Luminescent element composition. Nii, Kazumi; Okada, Hisashi (Fuji Photo Film Co., Ltd., Japan). PCT Int. Appl. WO 2002079343 A1 **20021010**, 101 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM; RW: AT, BE, BF, BJ, CF, CG, CH,

CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (Japanese). CODEN: PIXXD2.  
APPLICATION: WO 2002-JP3101 20020328. PRIORITY: JP 2001-101027 20010330.

GI



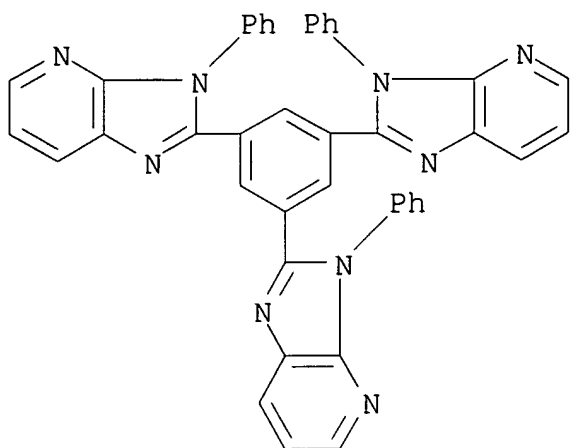
AB A luminescent element characterized by comprising a substrate, a pair of electrodes formed thereover, .gtoreq.1 luminescent layer which is disposed between the electrodes and comprises a luminescent material represented by a general formula [I, R1-R5 = H, a substituent; X = O, S, or NR7 (R7 = H or a substituent); L = a connecting group having a conjugated bond; and R6, R7 = H, a substituent, provided that .gtoreq.1 of R6 and R7 = an electron-attracting group.] and a host material, and an org. film which is disposed between the luminescent layer and the cathode so as to be in contact with the luminescent layer and has an ionization potential higher than that of the host material. The compd. represented by I may be in the form of a metal complex.

IT **313950-73-1**

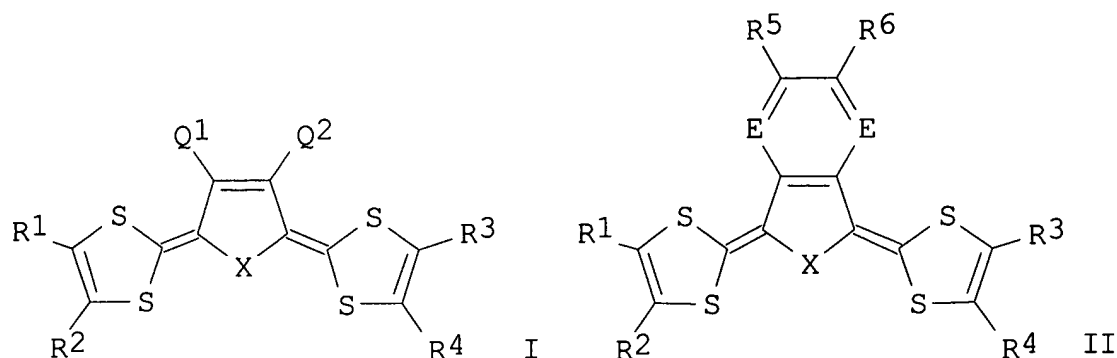
(luminescent element contg. indandione derivs.)

RN 313950-73-1 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-phenyl- (9CI) (CA INDEX NAME)



IC ICM C09K011-06  
 ICS H05B033-14; H05B033-22  
 CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 ST org **electroluminescent** device indanedion  
 IT Cathodes  
 Electrodes  
**Electroluminescent** devices  
 Ionization potential  
 Luminescent substances  
 (luminescent element contg. indandione derivs.)  
 IT 1450-63-1 2085-33-8, Tris(8-quinolinolato)aluminum 4733-39-5  
 15082-28-7 50926-11-9, ITO 65181-78-4, TPD 151965-47-8  
 161001-49-6 255709-81-0 303049-16-3 **313950-73-1**  
 457286-70-3 467449-38-3 467449-45-2  
 (luminescent element contg. indandione derivs.)  
 L35 ANSWER 26 OF 57 HCA COPYRIGHT 2005 ACS on STN  
 137:301831 Organic **electroluminescent** devices. Ise, Toshihiro  
 (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP  
 2002299060 A2 **20021011**, 13 pp. (Japanese). CODEN:  
 JKXXAF. APPLICATION: JP 2001-99974 20010330.  
 GI



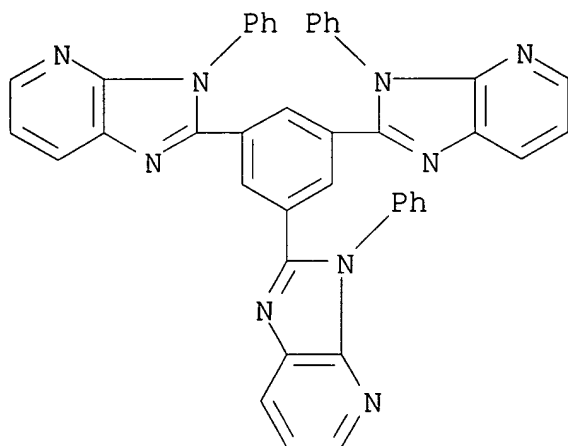
AB The devices comprise a pair of electrodes interposing a phosphor comprising a host and a guest compd. having an electron donor-acceptor structure in the doped states, where the guest compd. comprises I, II [R1-6, Q1-2 = H, substituent; X = O, S, Te; E = CH, N; and Q1-2 may form a 5- or 6-membered arom. hydrocarbyl or arom. heterocyclyl moiety].

IT **313950-73-1**

(org. **electroluminescent** devices contg.  
bisthiodylidenedithiole derivs.)

RN 313950-73-1 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-phenyl- (9CI) (CA INDEX NAME)



IC ICM H05B033-14

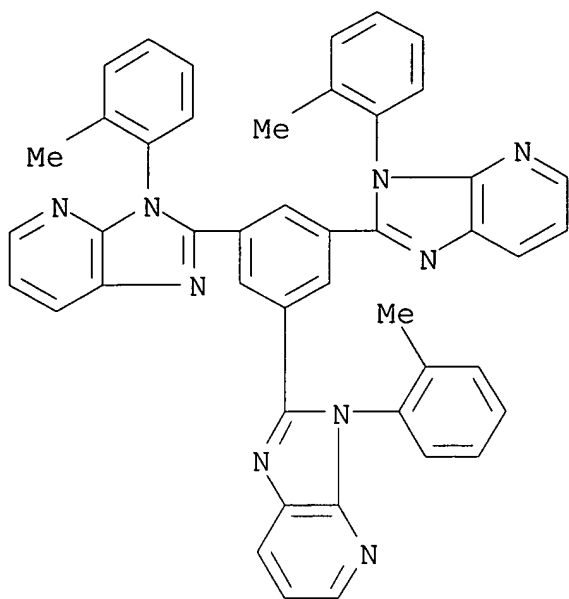
ICS C09K011-06

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST org **electroluminescent** device



- dithiolyidenedihydrothiophene deriv
- IT **Electroluminescent** devices  
Electron acceptors  
Electron donors  
Phosphors  
(org. **electroluminescent** devices contg.  
bisthiodylidenedithiole derivs.)
- IT 51325-91-8, DCM 123847-85-8, [1,1'-Biphenyl]-4,4'-diamine,  
N,N'-di-1-naphthalenyl-N,N'-diphenyl-  
(org. **electroluminescent** devices contg.  
bisthiodylidenedithiole derivs.)
- IT 2085-33-8 154014-24-1 **313950-73-1** 335274-72-1  
467467-47-6 467468-01-5  
(org. **electroluminescent** devices contg.  
bisthiodylidenedithiole derivs.)
- L35 ANSWER 27 OF 57 HCA COPYRIGHT 2005 ACS on STN
- 137:270214 Manufacture of organic thin-film device, and transfer  
material and apparatus used in the manufacture. Tateishi, Tomomi;  
Shibata, Takeshi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai  
Tokkyo Koho JP 2002289346 A2 **20021004**, 14 pp. (Japanese).  
CODEN: JKXXAF. APPLICATION: JP 2001-89663 20010327.
- AB The device such as **electroluminescent** device is manufd. by  
forming an org. film on a temporary support by wet method to give a  
transfer material, placing and heating the transfer material on a  
substrate so that the org. film side faces the substrate, and  
stripping the temporary support, wherein .gtoreq.2 transfer  
materials having org. film layers with the same or different compns.  
or a transfer material having .gtoreq.2 org. film layers having the  
same of different compns. are used so that the resulting substrate  
has .gtoreq.2 kinds of transferred org. film layers. The device has  
good **light-emitting** efficiency, **light**  
**emission** uniformity, and durability.
- IT **358974-66-0**  
(transfer material contg.; manuf. of org. thin-film device with  
transfer material)
- RN 358974-66-0 HCA
- CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-  
methylphenyl)- (9CI) (CA INDEX NAME)

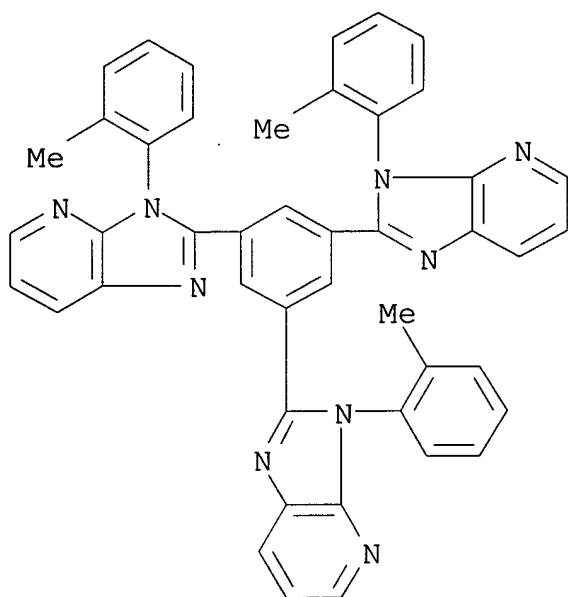


- IC ICM H05B033-10  
ICS H05B033-12; H05B033-14; H05B033-22
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
- ST **electroluminescent** device org film transfer material  
method app
- IT **Electroluminescent** devices  
Films  
(manuf. of org. thin-film device with transfer material)
- IT 25067-59-8, Poly(vinyl carbazole) 94928-86-6, Tris(2-phenylpyridine) iridium **358974-66-0**  
(transfer material contg.; manuf. of org. thin-film device with transfer material)
- L35 ANSWER 28 OF 57 HCA COPYRIGHT 2005 ACS on STN  
137:208147 Organic **electroluminescent** element with high luminance. Mishima, Masayuki (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002246184 A2 **20020830**, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-37500 20010214.
- AB The invention prefers to an org. **electroluminescent** element comprising a front plate, transparent electrode layer, org. compd. later and back plate, wherein the org. compd. layer contains .gtoreq.1 hole injection layer (polyethylene dioxythiophene/polystyrenesulfonate) and **light-emitting** layer.
- IT **358974-66-0**  
(electronic transport layer; org. **electroluminescent**

element having ethylenedioxythiophene/styrenesulfonate-contg. hole injection layer with high liminance)

RN 358974-66-0 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-methylphenyl)- (9CI) (CA INDEX NAME)



IC ICM H05B033-26

ICS H05B033-14; H05B033-22; H05B033-28

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST hole injection electrode **electroluminescent**  
ethylenedioxythiophene styrenesulfonate

IT Luminescent substances

(**electroluminescent**; having  
ethylenedioxythiophene/styrenesulfonate-contg. hole injection  
layer with high liminance)

IT **Electroluminescent** devices

(having ethylenedioxythiophene/styrenesulfonate-contg. hole  
injection layer with high liminance)

IT 7429-90-5, Aluminum, uses **358974-66-0**

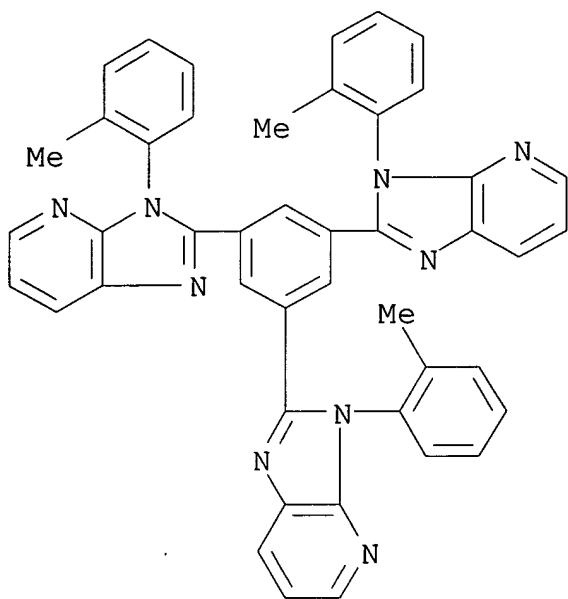
(electronic transport layer; org. **electroluminescent**  
element having ethylenedioxythiophene/styrenesulfonate-contg. hole  
injection layer with high liminance)

IT 94928-86-6

(electronic transport material; org. **electroluminescent**  
element having ethylenedioxythiophene/styrenesulfonate-contg. hole  
injection layer with high liminance)

IT 65181-78-4, N,N'-Diphenyl-N,N'-di(m-tolyl)benzidine

- (hole transport layer; org. **electroluminescent** element having ethylenedioxythiophene/styrenesulfonate-contg. hole injection layer with high liminance)
- IT 58328-31-7, 4,4'-Bis(carbazol-9-yl)biphenyl  
(host material; org. **electroluminescent** element having ethylenedioxythiophene/styrenesulfonate-contg. hole injection layer with high liminance)
- IT 332951-15-2  
(org. **electroluminescent** element having ethylenedioxythiophene/styrenesulfonate-contg. hole injection layer with high liminance)
- L35 ANSWER 29 OF 57 HCA COPYRIGHT 2005 ACS on STN  
137:192553 Organic **electroluminescent** devices using thermoplastic substrates and their manufacture. Mishima, Masayuki (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002246172 A2 **20020830**, 9 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-37501 20010214.
- AB The org. **EL** device has a thermoplastic substrate having thereon transparent electrodes, .gtoreq.1 org. compd. layers involving luminescent layers, back electrodes, and a thermoplastic sealing which seals the org. compd. layer(s) and shields outside airs and is fused with the thermoplastic substrate around the periphery of the luminescent laminate to offer excellent brightness, luminescent efficiency and durability. The device is useful for full color displays, back lights, surface light sources, light source arrays for printers, etc.
- IT **358974-66-0**, 2,2',2''-(1,3,5-Benzenetriyl)tris[3-(2-methylphenyl)-3H-imidazo[4,5-b]pyridine]  
(**electron transporting** layer; manuf. of org. **EL** devices using thermoplastic substrates sealed with thermoplastic sealings for enhanced durability)
- RN 358974-66-0 HCA  
CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-methylphenyl)- (9CI) (CA INDEX NAME)]

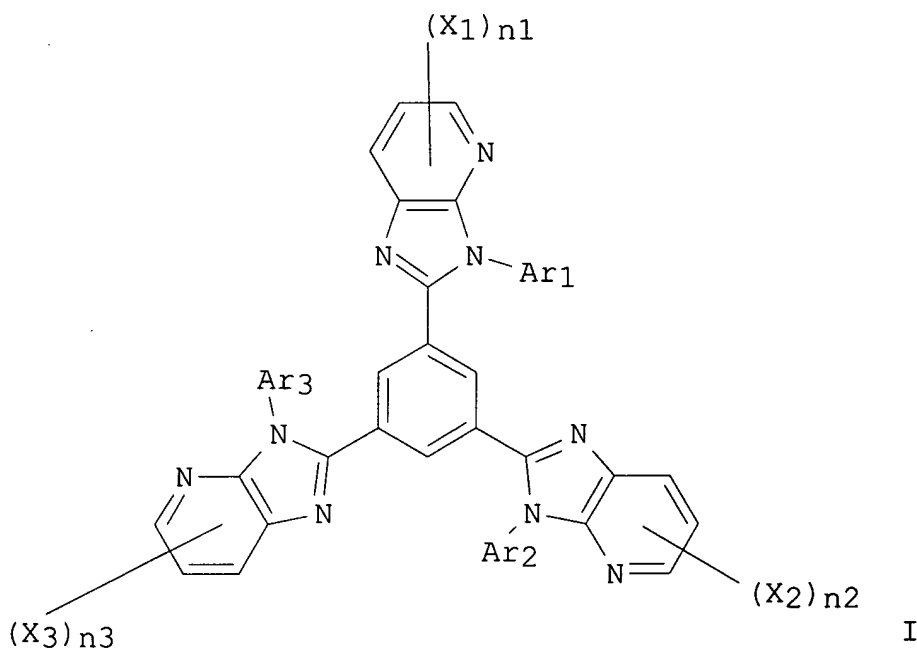


- IC ICM H05B033-04  
ICS H05B033-02; H05B033-10; H05B033-14
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
- ST org **electroluminescent** device thermoplastic substrate durability; sealing thermoplastic substrate org **electroluminescent** device
- IT Fluoropolymers, uses  
(Nitoflon, substrate; manuf. of org. **EL** devices using thermoplastic substrates sealed with thermoplastic sealings for enhanced durability)
- IT Polycarbonates, uses  
(Panlite, substrate; manuf. of org. **EL** devices using thermoplastic substrates sealed with thermoplastic sealings for enhanced durability)
- IT Polyesters, uses  
(Tetoron Film, substrate; manuf. of org. **EL** devices using thermoplastic substrates sealed with thermoplastic sealings for enhanced durability)
- IT Sealing  
(manuf. of org. **EL** devices using thermoplastic substrates sealed with thermoplastic sealings for enhanced durability)
- IT **Electroluminescent** devices  
(org.; manuf. of org. **EL** devices using thermoplastic substrates sealed with thermoplastic sealings for enhanced durability)

- IT   Plastics, uses  
      (thermoplastics, substrates; manuf. of org. **EL** devices  
      using thermoplastic substrates sealed with thermoplastic sealings  
      for enhanced durability)
- IT   117944-65-7, Indium zinc oxide  
      (IZO, transparent electrode; manuf. of org. **EL** devices  
      using thermoplastic substrates sealed with thermoplastic sealings  
      for enhanced durability)
- IT   7440-22-4, Silver, uses 12614-86-7  
      (Mg-Ag/Ag laminate back electrode; manuf. of org. **EL**  
      devices using thermoplastic substrates sealed with thermoplastic  
      sealings for enhanced durability)
- IT   1312-43-2, Indium oxide (In<sub>2</sub>O<sub>3</sub>)  
      (Zn-doped In<sub>2</sub>O<sub>3</sub> transparent electrode; manuf. of org. **EL**  
      devices using thermoplastic substrates sealed with thermoplastic  
      sealings for enhanced durability)
- IT   7440-66-6, Zinc, uses  
      (dopant, Zn-doped In<sub>2</sub>O<sub>3</sub> transparent electrode; manuf. of org.  
      **EL** devices using thermoplastic substrates sealed with  
      thermoplastic sealings for enhanced durability)
- IT   **358974-66-0**, 2,2',2''-(1,3,5-Benzenetriyl)tris[3-(2-  
methylphenyl)-3H-imidazo[4,5-b]pyridine]  
      (**electron transporting** layer; manuf. of org.  
      **EL** devices using thermoplastic substrates sealed with  
      thermoplastic sealings for enhanced durability)
- IT   15082-28-7, 2-(4-Biphenyl)-5-(4-tert-butylphenyl)-1,3,4-oxadiazole  
123847-85-8  
      (**electron-transporting** material; manuf. of  
      org. **EL** devices using thermoplastic substrates sealed  
      with thermoplastic sealings for enhanced durability)
- IT   155090-83-8, Baytron P  
      (hole injection layer; manuf. of org. **EL** devices using  
      thermoplastic substrates sealed with thermoplastic sealings for  
      enhanced durability)
- IT   25067-59-8, Poly(vinylcarbazole)  
      (hole transporting/host material; manuf. of org. **EL**  
      devices using thermoplastic substrates sealed with thermoplastic  
      sealings for enhanced durability)
- IT   58328-31-7, 4,4'-N,N'-Dicarbazolylbiphenyl  
      (host material; manuf. of org. **EL** devices using  
      thermoplastic substrates sealed with thermoplastic sealings for  
      enhanced durability)
- IT   94928-86-6, Tris(2-phenylpyridine)iridium  
      (phosphor; manuf. of org. **EL** devices using  
      thermoplastic substrates sealed with thermoplastic sealings for  
      enhanced durability)

137:147576 White- or blue-emitting organic **electroluminescent (EL)** elements with excellent emission efficiency and color purity. Ishii, Masahiko; Noda, Hiroshi; Miura, Atsushi; Owaki, Takeshi; Taga, Yasunori; Okada, Hisashi; Igarashi, Tatsuya (Toyota Central Research and Development Laboratories, Inc., Japan; Fuji Photo Film Co., Ltd.). Jpn. Kokai Tokkyo Koho JP 2002216971 A2 **20020802**, 14 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-11354 20010119.

GI



AB The element with emission peak 400-500 nm, useful for a liq. crystal display backlight, has a hole transport layer, an org. **light-emitting** layer, and an org. **electron transport** layer contg. I (Ar1,2 = aryl, arom. heterocyclic group; X1-3 = substituent; n1-3 = 0-3). The **light-emitting** layer may include a layer for emitting a yellow-orange light with wavelength 550-600 nm and a layer for **emitting** a blue **light** with wavelength 400-500 nm, wherein the **electron transport** layer is formed between the **light-emitting** layer and a cathode.

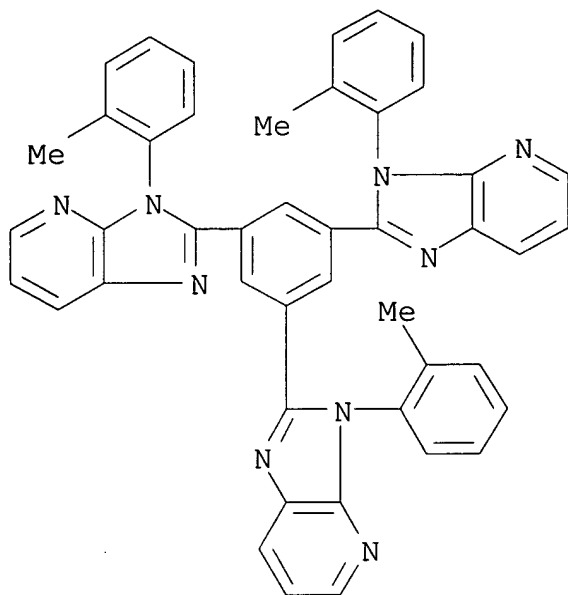
IT **358974-66-0**

(**electron transport** layer or hole blocking layer; white- or blue-emitting org. **EL** elements with

good emission efficiency and color purity)

RN 358974-66-0 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-methylphenyl)- (9CI) (CA INDEX NAME)



IC ICM H05B033-22

ICS H05B033-22; C09K011-06; H05B033-12; H05B033-14

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST org **electroluminescent** element white emission efficiency; blue emitting **EL electron transport** layer; liq crystal display backlight blue emitting **EL**

IT **Electroluminescent** devices  
(blue-emitting; white- or blue-emitting org. **EL** elements with good emission efficiency and color purity)

IT **Electroluminescent** devices  
(white-emitting; white- or blue-emitting org. **EL** elements with good emission efficiency and color purity)

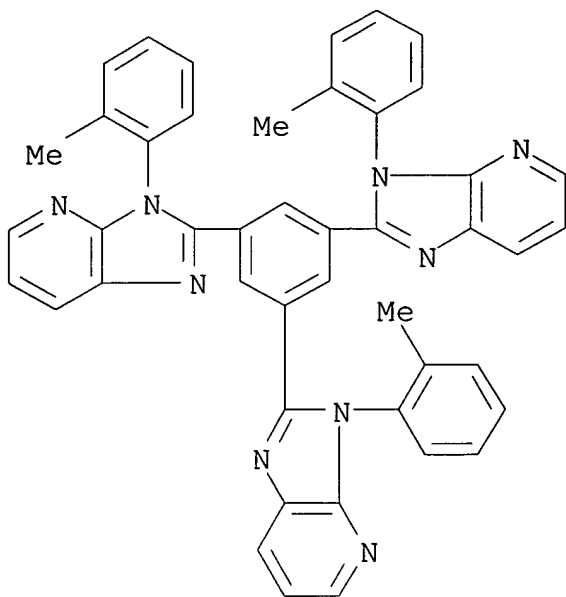
IT 349666-25-7  
(blue-emitting layer; white- or blue-emitting org. **EL** elements with good emission efficiency and color purity)

IT 517-51-1, Rubren  
(dopant, yellow-emitting layer; white- or blue-emitting org. **EL** elements with good emission efficiency and color purity)

IT **358974-66-0**  
(**electron transport** layer or hole blocking layer; white- or blue-emitting org. **EL** elements with

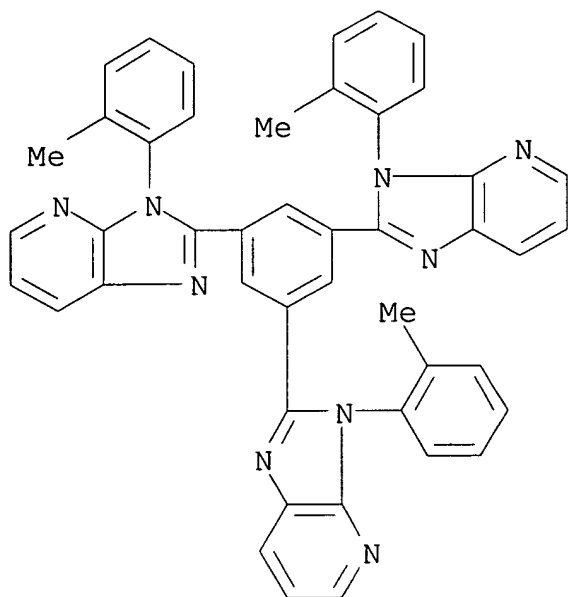


- good emission efficiency and color purity)
- IT 2085-33-8, Tris-(8-hydroxyquinoline)aluminum  
(**electron transport** layer; white- or  
blue-emitting org. **EL** elements with good emission  
efficiency and color purity)
- IT 167218-46-4  
(hole transport layer or yellow-emitting layer; white- or  
blue-emitting org. **EL** elements with good emission  
efficiency and color purity)
- L35 ANSWER 31 OF 57 HCA COPYRIGHT 2005 ACS on STN  
137:131907 Manufacture of organic **electroluminescent** devices  
having high-brightness and high-efficiency emission. Okada, Hisashi  
(Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP  
2002216956 A2 **20020802**, 18 pp. (Japanese). CODEN:  
JKXXAF. APPLICATION: JP 2001-11826 20010119.
- AB The org. **EL** device capable of uniform surface emission  
consists of a pair of electrodes on a substrate, and in between,  
.gtoreq.1 org. compd. layers formed by applying its soln. thinned  
with a F compd.-contg. solvent and preferably, contg. .gtoreq.1  
ionic substances. Preferably, the device has another layer of the  
org. compd. formed by applying its soln. thinned with a solvent free  
from the F compd. The F compd. may be fluorinated alcs.,  
F-substituted ketones, F-substituted esters, fluorinated carboxylic  
acids, F-substituted amides, F-substituted alkanes, F-substituted  
arom. compds., and/or fluorinated ethers. The fluorinated alcs. may  
be shown as ACH<sub>2</sub>OH [A = CF<sub>3</sub>, CHF<sub>2</sub>(CF<sub>2</sub>)<sub>n</sub>; n = 1-5 integer].  
Preferably, .gtoreq.1 layers of the org. compd. layers contain  
polymers which may be .pi.-conjugated polymers or nonconjugated  
polymers having .pi.-conjugation in partial structures. The  
substrate may be a plastic, preferably selected from polycarbonates,  
poly(ethylene terephthalate), poly(Me methacrylate), polyimides,  
polyesters, polyethers, polyether-sulfones, epoxy resins,  
polyolefins, and poly(vinyl chloride).
- IT **358974-66-0**  
(org. layer; manuf. of org. **EL** devices involving org.  
compd. layers formed by using F compd.-contg. solvents)
- RN 358974-66-0 HCA
- CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-  
methylphenyl)- (9CI) (CA INDEX NAME)]



- IC ICM H05B033-10  
ICS C08K005-05; C08L101-00; H05B033-14
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
- ST org **electroluminescent** device fluorine compd solvent;  
plastic substrate org **electroluminescent** device;  
**luminescent** substance org fluorinated alc solvent
- IT Polyvinyl butyrals  
(org. layer; manuf. of org. **EL** devices involving org.  
compd. layers formed by using F compd.-contg. solvents)
- IT **Electroluminescent** devices  
(org.; manuf. of org. **EL** devices involving org. compd.  
layers formed by using F compd.-contg. solvents)
- IT Polysulfones, uses  
(polyether-, substrate; manuf. of org. **EL** devices  
involving org. compd. layers formed by using F compd.-contg.  
solvents)
- IT Polyethers, uses  
(polysulfone-, substrate; manuf. of org. **EL** devices  
involving org. compd. layers formed by using F compd.-contg.  
solvents)
- IT Epoxy resins, uses  
Polycarbonates, uses  
Polyesters, uses  
Polyethers, uses  
Polyimides, uses  
Polyolefins

- (substrate; manuf. of org. **EL** devices involving org. compd. layers formed by using F compd.-contg. solvents)
- IT 905-62-4, 2,5-Bis(1-naphthyl)-1,3,4-oxadiazole  
(**electron** injection and **transporting** layer;  
manuf. of org. **EL** devices involving org. compd. layers  
formed by using F compd.-contg. solvents)
- IT 25067-59-8, Poly(N-vinylcarbazole)  
(hole injection and transporting layer; manuf. of org. **EL**  
devices involving org. compd. layers formed by using F  
compd.-contg. solvents)
- IT 76-37-9, 2,2,3,3-Tetrafluoropropyl alcohol 107-06-2,  
1,2-Dichloroethane, uses 60838-59-7  
(manuf. of org. **EL** devices involving org. compd. layers  
formed by using F compd.-contg. solvents)
- IT 15635-95-7 110517-99-2 **358974-66-0**  
(org. layer; manuf. of org. **EL** devices involving org.  
compd. layers formed by using F compd.-contg. solvents)
- IT 9002-86-2, Poly(vinyl chloride) 9011-14-7, Poly(methyl  
methacrylate) 25038-59-9, Poly(ethylene terephthalate), uses  
(substrate; manuf. of org. **EL** devices involving org.  
compd. layers formed by using F compd.-contg. solvents)
- L35 ANSWER 32 OF 57 HCA COPYRIGHT 2005 ACS on STN
- 137:39104 Organic **electroluminescent** devices. Mishima,  
Masayuki (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho  
JP 2002175882 A2 **20020621**, 9 pp. (Japanese). CODEN:  
JKXXAF. APPLICATION: JP 2000-373520 20001207.
- AB The devices comprise: a polymer substrate (polyester, polycarbonate,  
polyethersulfone or fluoropolymer) having an oxygen permeability at  
25.degree. <  $2.0 \times 10^{-13}$  ([cm<sup>3</sup>][cm])/([cm<sup>2</sup>][s][pa]); a 1st and a 2nd  
electrode; an org. phosphor; a hole and an **electron**  
**transport** layer; and a stainless steel encapsulation.
- IT **358974-66-0**, 2,2',2''-(1,3,5-Benzenetriyl)tris[3-(2-  
methylphenyl)-3H-imidazo[4,5-b]pyridine]  
(org. **electroluminescent** devices)
- RN 358974-66-0 HCA
- CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-  
methylphenyl)- (9CI) (CA INDEX NAME)



IC ICM H05B033-14  
ICS C09K011-06; H05B033-04  
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
ST org **electroluminescent** device  
IT **Electroluminescent** devices  
    **Electron transport**  
    Hole transport  
    Permeability  
    Phosphorescence  
    Phosphors  
    Printing apparatus  
    (org. **electroluminescent** devices)  
IT Fluoropolymers, uses  
    Polycarbonates, uses  
    Polyesters, uses  
    (org. **electroluminescent** devices)  
IT Polysulfones, uses  
    (polyether-; org. **electroluminescent** devices)  
IT Polyethers, uses  
    (polysulfone-; org. **electroluminescent** devices)  
IT Electrodes  
    (transparent; org. **electroluminescent** devices)  
IT 852-38-0, PBD 1314-13-2, Zinc oxide (ZnO), uses 7631-86-9,  
    Silica, uses 12597-68-1, Stainless steel, uses 25067-59-8,  
    Polyvinyl carbazole 50926-11-9, ITO 58328-31-7 94928-86-6,  
    Tris(2-phenylpyridine)iridium 123847-85-8 **358974-66-0**,

2,2',2''-(1,3,5-Benzenetriyl)tris[3-(2-methylphenyl)-3H-imidazo[4,5-b]pyridine]  
(org. **electroluminescent** devices)

L35 ANSWER 33 OF 57 HCA COPYRIGHT 2005 ACS on STN

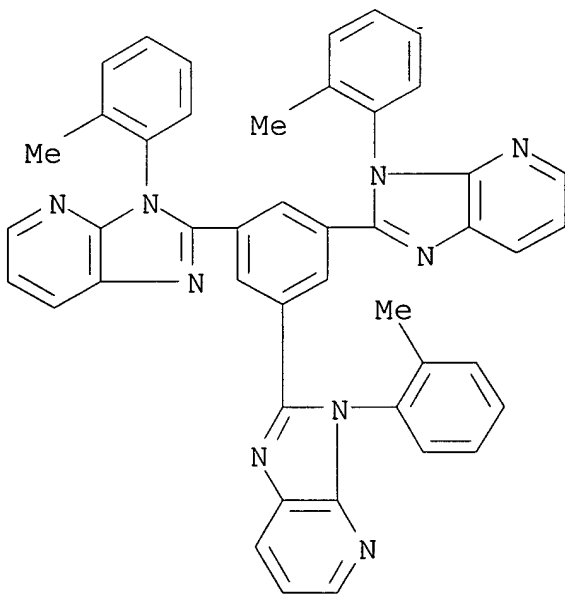
137:39103 Organic **electroluminescent** devices. Mishima, Masayuki (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002175881 A2 **20020621**, 9 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-373518 20001207.

AB The devices comprise: a polymer substrate (polyester, polycarbonate, polyethersulfone or fluoropolymer) having an oxygen permeability at 25.degree. <  $2.0 \times 10^{-13}$  ([cm<sup>3</sup>][cm])/([cm<sup>2</sup>][s][pa]); a 1st and a 2nd electrode; an org. phosphor; a hole and an **electron transport** layer; and a stainless steel encasement contg. an oxygen absorber.

IT **358974-66-0**  
(org. **electroluminescent** devices)

RN 358974-66-0 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-methylphenyl)- (9CI) (CA INDEX NAME)



IC ICM H05B033-14

ICS C09K011-06; H05B033-22

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST org **electroluminescent** device

IT **Electroluminescent** devices

**Electron transport**

Hole transport  
Permeability  
Phosphorescence  
Phosphors  
Printing apparatus  
(org. **electroluminescent** devices)

IT Fluoropolymers, uses  
Polycarbonates, uses  
Polyesters, uses

(org. **electroluminescent** devices)

IT Polysulfones, uses  
(polyether-; org. **electroluminescent** devices)

IT Polyethers, uses  
(polysulfone-; org. **electroluminescent** devices)

IT Electrodes  
(transparent; org. **electroluminescent** devices)

IT 101-02-0, Triphenylphosphite 128-37-0, 2,6-Di-tert-butyl-4-methylphenol, uses 852-38-0, PBD 1314-13-2, Zinc oxide (ZnO), uses 1345-25-1, Ferrous oxide, uses 7439-95-4, Magnesium, uses 7631-86-9, Silica, uses 12597-68-1, Stainless steel, uses 25067-59-8, Polyvinyl carbazole 50926-11-9, ITO 58328-31-7 94928-86-6, Tris(2-phenylpyridine)iridium 123847-85-8

**358974-66-0**

(org. **electroluminescent** devices)

L35 ANSWER 34 OF 57 HCA COPYRIGHT 2005 ACS on STN

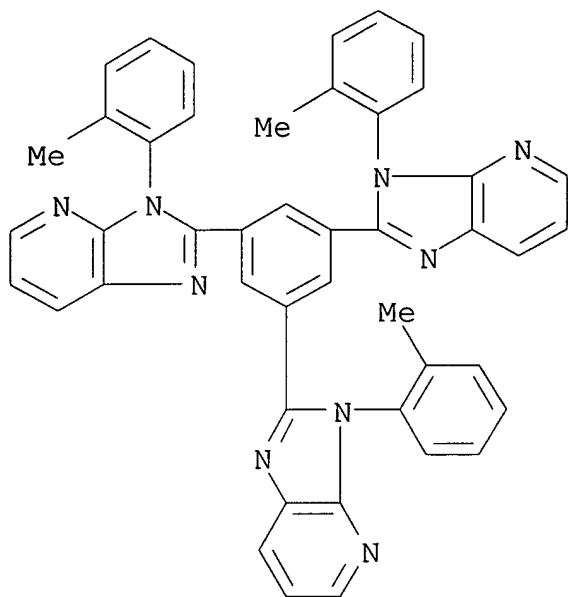
137:39102 Organic **electroluminescent** devices. Mishima, Masayuki (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002175876 A2 **20020621**, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-373519 20001207.

AB The devices comprise: a polymer substrate (polyester, polycarbonate, polyethersulfone or fluoropolymer) having an oxygen permeability at 25.degree. <  $2.0 \times 10^{-13}$  ([cm<sup>3</sup>][cm])/([cm<sup>2</sup>][s][pa]); a 1st and a 2nd electrode; an org. phosphor; and a hole and an **electron transport** layer.

IT **358974-66-0**, 2,2',2''-(1,3,5-Benzenetriyl)tris[3-(2-methylphenyl)-3H-imidazo[4,5-b]pyridine]  
(org. **electroluminescent** devices)

RN 358974-66-0 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-methylphenyl)- (9CI) (CA INDEX NAME)



IC ICM H05B033-02  
ICS C09K011-06; H05B033-10; H05B033-14  
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
ST org **electroluminescent** device  
IT **Electroluminescent** devices  
    **Electron transport**  
    Hole transport  
    Permeability  
    Phosphorescence  
    Phosphors  
    Printing apparatus  
    (org. **electroluminescent** devices)  
IT Fluoropolymers, uses  
    Polycarbonates, uses  
    Polyesters, uses  
    (org. **electroluminescent** devices)  
IT Polysulfones, uses  
    (polyether-; org. **electroluminescent** devices)  
IT Polyethers, uses  
    (polysulfone-; org. **electroluminescent** devices)  
IT Electrodes  
    (transparent; org. **electroluminescent** devices)  
IT 852-38-0, PBD 1314-13-2, Zinc oxide (ZnO), uses 7631-86-9,  
    Silica, uses 25067-59-8, Polyvinyl carbazole 50926-11-9, ITO  
    58328-31-7 94928-86-6, Tris(2-phenylpyridine)iridium 123847-85-8  
    **358974-66-0**, 2,2',2''-(1,3,5-Benzenetriyl)tris[3-(2-

methylphenyl)-3H-imidazo[4,5-b]pyridine]  
(org. **electroluminescent** devices)

L35 ANSWER 35 OF 57 HCA COPYRIGHT 2005 ACS on STN

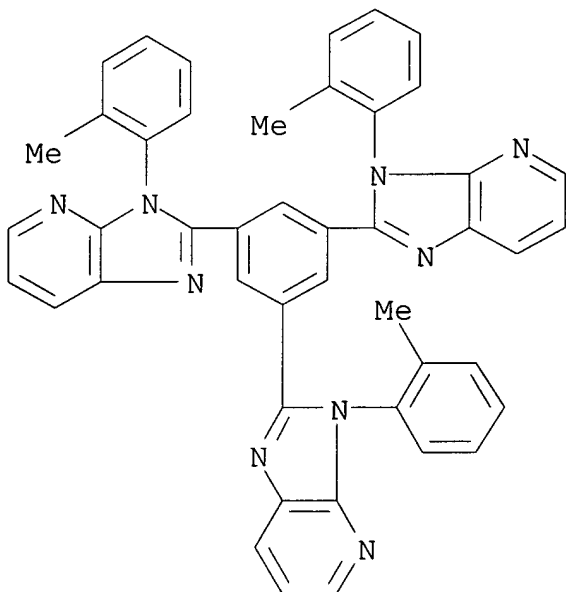
137:12994 Organic **electroluminescent** devices and manufacture.  
Mishima, Masayuki; Fujimura, Hidetoshi (Fuji Photo Film Co., Ltd.,  
Japan). Jpn. Kokai Tokkyo Koho JP 2002170677 A2 **20020614**,  
9 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-364649  
20001130.

AB The devices comprise: a glass substrate; and an ITO electrode, a  
hole-injection, a hole transport, a phosphor, an **electron**  
**transport** and a Mg/Ag electrode layer, where the lamination  
is formed in an atm. contg. no oxygen.

IT **358974-66-0**, 2,2',2''-(1,3,5-Benzenetriyl)-tris[3-(2-  
methylphenyl)-3H-imidazo[4,5-b]pyridine]  
(org. **electroluminescent** devices and manuf.)

RN 358974-66-0 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-  
methylphenyl)- (9CI) (CA INDEX NAME)



IC ICM H05B033-14

ICS H05B033-10

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related  
Properties)

ST org **electroluminescent** device manuf

IT Atmosphere (environmental)

**Electroluminescent** devices

**Electron transport**



Glass substrates

Hole transport

(org. **electroluminescent** devices and manuf.)

IT 852-38-0, PBD 7439-95-4, Magnesium, uses 7440-22-4, Silver, uses 25067-59-8, Polyvinyl carbazole 50926-11-9, ITO 94928-86-6, Tris(2-phenyl pyridine)iridium **358974-66-0**, 2,2',2''-(1,3,5-Benzenetriyl)-tris[3-(2-methylphenyl)-3H-imidazo[4,5-b]pyridine]

(org. **electroluminescent** devices and manuf.)

IT 7782-44-7, Oxygen, reactions

(org. **electroluminescent** devices and manuf.)

L35 ANSWER 36 OF 57 HCA COPYRIGHT 2005 ACS on STN

137:12993 Organic **electroluminescent** devices and manufacture.

Mishima, Masayuki (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002170676 A2 **20020614**, 8 pp. (Japanese).

CODEN: JKXXAF. APPLICATION: JP 2000-370149 20001205.

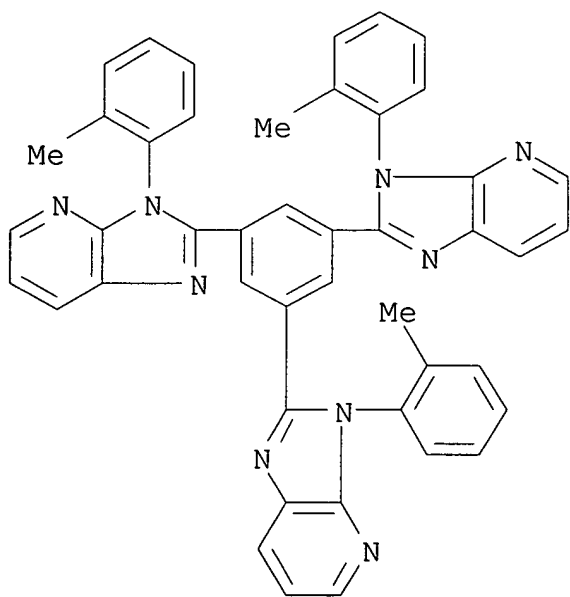
AB The devices comprise: a glass substrate; and an ITO electrode, a hole-injection, a hole transport, a phosphor, an **electron transport**, an **electron** injection and a Mg/Ag electrode layer, where the lamination is formed in an atm. contg. oxygen < 100 ppm.

IT **358974-66-0**, 2,2',2''-(1,3,5-Benzenetriyl)-tris[3-(2-methylphenyl)-3H-imidazo[4,5-b]pyridine]

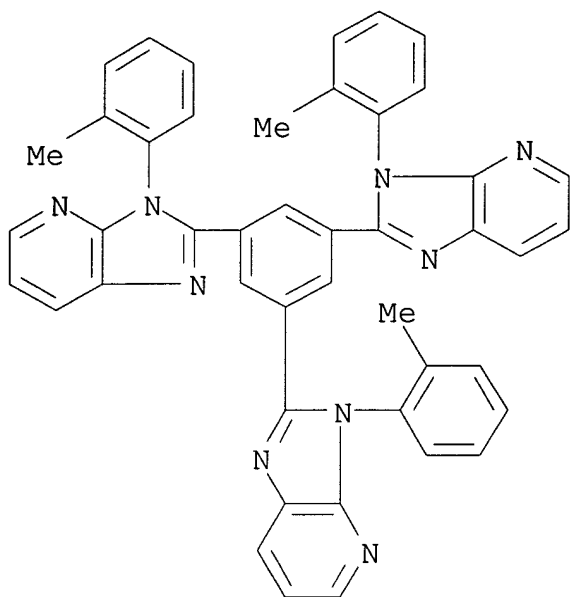
(Org. **electroluminescent** devices and manuf.)

RN 358974-66-0 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-methylphenyl)- (9CI) (CA INDEX NAME)]



IC ICM H05B033-14  
ICS C09K011-06; H05B033-10  
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
ST org **electroluminescent** device manuf  
IT Atmosphere (environmental)  
    **Electroluminescent** devices  
    **Electron transport**  
    Glass substrates  
    Hole transport  
        (org. **electroluminescent** devices and manuf.)  
IT 852-38-0, PBD 7439-95-4, Magnesium, uses 7440-22-4, Silver, uses 25067-59-8, Polyvinyl carbazole 94928-86-6, Tris(2-phenylpyridine)iridium **358974-66-0**, 2,2',2''-(1,3,5-Benzenetriyl)-tris[3-(2-methylphenyl)-3H-imidazo[4,5-b]pyridine]  
    (org. **electroluminescent** devices and manuf.)  
IT 7782-44-7, Oxygen, reactions  
    (org. **electroluminescent** devices and manuf.)  
IT 50926-11-9, ITO  
    (org. **electroluminescent** devices and manuf.)  
  
L35 ANSWER 37 OF 57 HCA COPYRIGHT 2005 ACS on STN  
137:12990 Organic **electroluminescent** devices and manufacture.  
Mishima, Masayuki (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002170672 A2 **20020614**, 9 pp. (Japanese).  
CODEN: JKXXAF. APPLICATION: JP 2000-370151 20001205.  
AB The devices comprise: a glass substrate; and an ITO electrode, a hole-injection, a hole transport, a phosphor, an **electron transport** and a Mg/Ag electrode layer, where the lamination is formed in an atm. contg. H2O < 100 ppm and oxygen < 100 ppm.  
IT **358974-66-0**, 2,2',2''-(1,3,5-Benzenetriyl)-tris[3-(2-methylphenyl)-3H-imidazo[4,5-b]pyridine]  
    (org. **electroluminescent** devices and manuf.)  
RN 358974-66-0 HCA  
CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-methylphenyl)- (9CI) (CA INDEX NAME)



- IC ICM H05B033-10  
ICS C09K011-06; H05B033-04; H05B033-14
- CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
- ST org **electroluminescent** device manuf
- IT Atmosphere (environmental)  
**Electroluminescent** devices  
**Electron transport**  
Glass substrates  
Hole transport  
(org. **electroluminescent** devices and manuf.)
- IT 852-38-0, PBD 7439-95-4, Magnesium, uses 7440-22-4, Silver, uses 25067-59-8, Polyvinyl carbazole 50926-11-9, ITO 94928-86-6, Tris(2-phenyl pyridine)iridium **358974-66-0**, 2,2',2''-(1,3,5-Benzenetriyl)-tris[3-(2-methylphenyl)-3H-imidazo[4,5-b]pyridine]  
(org. **electroluminescent** devices and manuf.)
- IT 7732-18-5, Water, reactions 7782-44-7, Oxygen, reactions  
(org. **electroluminescent** devices and manuf.)
- L35 ANSWER 38 OF 57 HCA COPYRIGHT 2005 ACS on STN
- 137:12989 Organic **electroluminescent** devices and manufacture. Mishima, Masayuki (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002170665 A2 **20020614**, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-370150 20001205.
- AB The devices comprise: a glass substrate; and an ITO electrode, a hole-injection, a hole transport, a phosphor, an **electron**

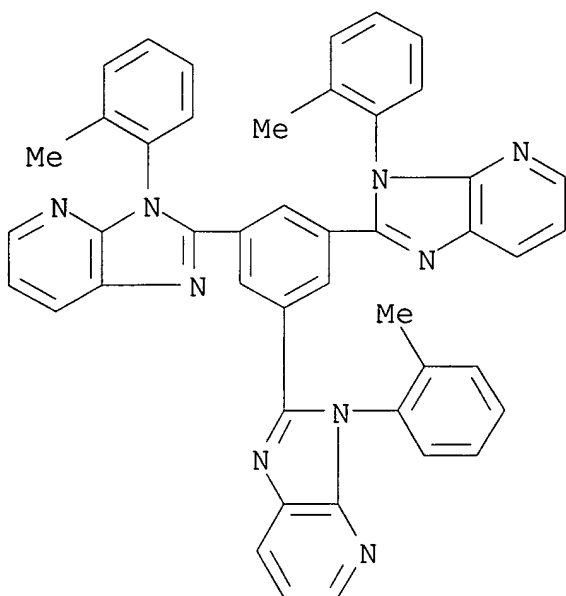
**transport** and a Mg/Ag electrode layer, where the lamination is formed in an atm. contg. oxygen < 100 ppm.

IT **358974-66-0**, 2,2',2''-(1,3,5-Benzenetriyl)-tris[3-(2-methylphenyl)-3H-imidazo[4,5-b]pyridine]

(org. **electroluminescent** devices and manuf.)

RN 358974-66-0 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-methylphenyl)- (9CI) (CA INDEX NAME)



IC ICM H05B033-04

ICS C09K011-06; H05B033-10; H05B033-14

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST org **electroluminescent** device manuf

IT Atmosphere (environmental)

**Electroluminescent** devices

**Electron transport**

Glass substrates

Hole transport

(org. **electroluminescent** devices and manuf.)

IT 7439-95-4, Magnesium, uses 7440-22-4, Silver, uses 50926-11-9, ITO 58328-31-7 94928-86-6, Tris(2-phenyl pyridine)iridium 123847-85-8 **358974-66-0**, 2,2',2''-(1,3,5-Benzenetriyl)-tris[3-(2-methylphenyl)-3H-imidazo[4,5-b]pyridine]

(org. **electroluminescent** devices and manuf.)

IT 7782-44-7, Oxygen, reactions

(org. **electroluminescent** devices and manuf.)

L35 ANSWER 39 OF 57 HCA COPYRIGHT 2005 ACS on STN

136:393076 **Electroluminescent** device with phosphor component.

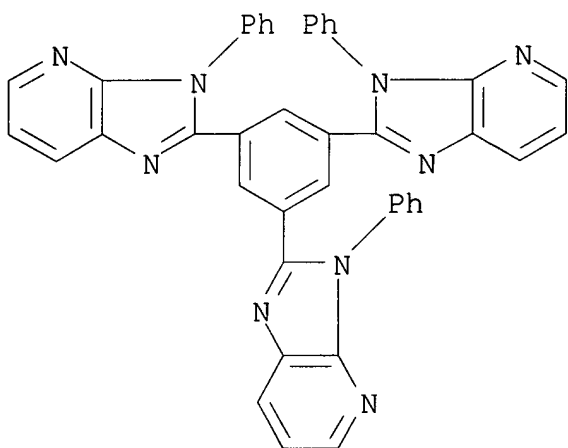
Mishima, Masayuki; Okada, Hisashi; Araki, Katsumi; Qiu, Xue-Peng; Ise, Toshihiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002158091 A2 **20020531**, 16 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-350170 20001116.

AB The invention refers to an **electroluminescent** device with an **electron transport** layer and an org. layer comprising a hole transport layer and a luminescent phosphor layer in a two or three layer structure for increased brightness and reduced costs.

IT **313950-73-1 358974-66-0 428455-07-6**  
(**electroluminescent** component)

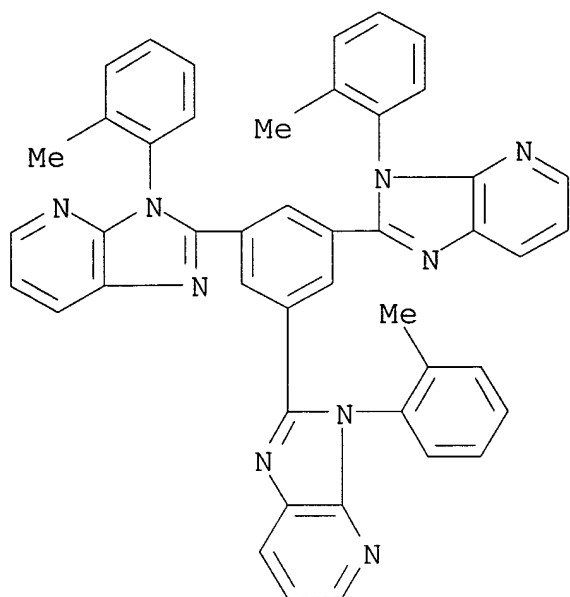
RN 313950-73-1 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-phenyl- (9CI) (CA INDEX NAME)



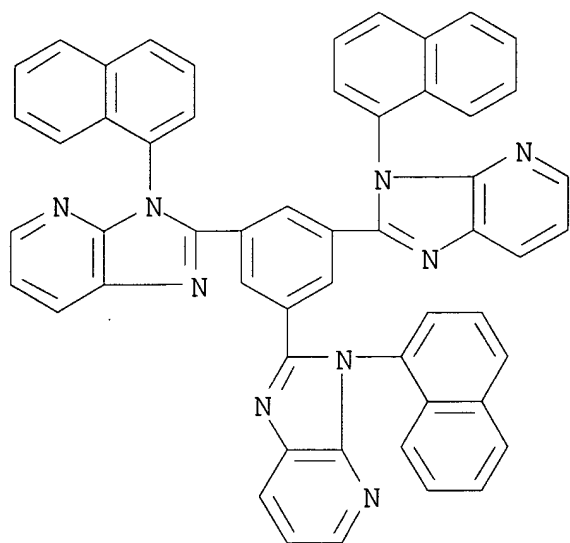
RN 358974-66-0 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-methylphenyl)- (9CI) (CA INDEX NAME)



RN 428455-07-6 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(1-naphthalenyl)- (9CI) (CA INDEX NAME)



IC ICM H05B033-14

ICS C09K011-06; H05B033-10; H05B033-22

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST **electroluminescent** device phosphor

IT **Electroluminescent** devices  
Phosphors

(**electroluminescent** component)

IT 6726-80-3 25067-59-8, Polyvinyl carbazole 50926-11-9, ITO  
58328-31-7, 4,4'-N,N'-Dicarbazolylbiphenyl 65181-78-4, N,  
N'-Bis(3-methylphenyl)-N,N'-diphenylbenzidine 94928-86-6  
155090-83-8, Baytron P **313950-73-1 358974-66-0**  
377092-02-9 **428455-07-6**

(**electroluminescent** component)

L35 ANSWER 40 OF 57 HCA COPYRIGHT 2005 ACS on STN

136:393052 Single layer organic **electroluminescent** device.

Araki, Katsumi; Okada, Hisashi; Qiu, Xue Peng; Mishima, Masayuki  
(Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP  
2002151267 A2 **20020524**, 17 pp. (Japanese). CODEN:  
JKXXAF. APPLICATION: JP 2000-348403 20001115.

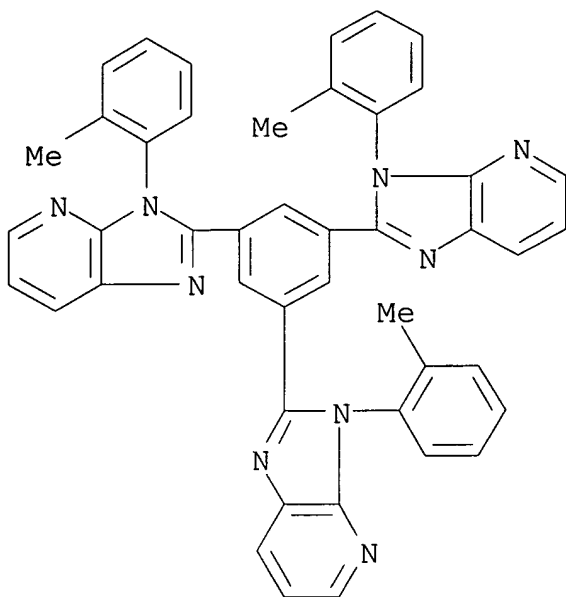
AB The **electroluminescent** device comprises an org. compd.  
single layer contg. a **light-emitting** compd.  
sandwiched between a pair of electrodes; wherein electron mobility  
of the org. compd. layer is  $\geq 3 \times 10^{-5} \text{ cm}^2 \text{ V}^{-1} \text{ s}^{-1}$  in  
an elec. field strength 400-1000 (V/cm)<sup>1/2</sup>. The device is capable  
of low-voltage operation, high luminance, high emission efficiency.  
and good high-temp. storage stability.

IT **358974-66-0**

(**electron**-injection and **-transport** material;  
single layer org. **electroluminescent** device)

RN 358974-66-0 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-  
methylphenyl)- (9CI) (CA INDEX NAME)

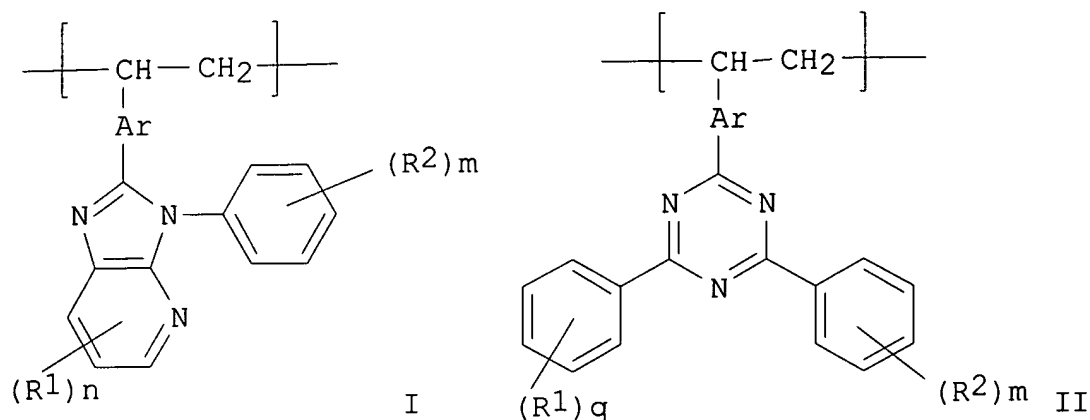


IC ICM H05B033-14  
ICS C09K011-06; H05B033-22  
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 38  
ST org **electroluminescent** device electron mobility control  
IT **Electroluminescent** devices  
(org.; single layer org. **electroluminescent** device)  
IT Electron mobility  
(single layer org. **electroluminescent** device)  
IT 4733-39-5 15082-28-7 26916-42-7 292624-58-9 353800-94-9  
**358974-66-0**  
(**electron**-injection and -**transport** material;  
single layer org. **electroluminescent** device)  
IT 58328-31-7 65181-78-4  
(host for phosphorescent substance; single layer org.  
**electroluminescent** device)

L35 ANSWER 41 OF 57 HCA COPYRIGHT 2005 ACS on STN  
136:377202 **Light-emitting** device and material  
therefor. Okada, Hisashi; Ise, Toshihiro; Mishima, Masayuki;  
Taguchi, Toshiki (Fuji Photo Film Co., Ltd., Japan). U.S. Pat.  
Appl. Publ. US 2002055014 A1 **20020509**, 91 pp. (English).  
CODEN: USXXCO. APPLICATION: US 2001-935711 20010824. PRIORITY: JP  
2000-254171 20000824; JP 2001-38718 20010215; JP 2001-236419  
20010803.

GI





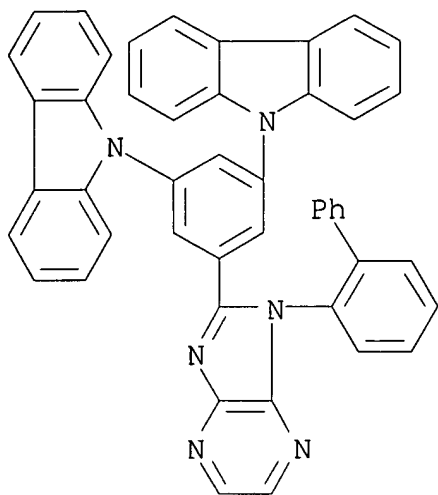
AB **Light-emitting** devices comprising a pair of electrodes formed on a substrate and org. compd. layers comprising a **light-emitting** layer provided in between the electrodes are described in which .gtoreq.1 of the org. compd. layers comprises a heterocyclic compd. having .gtoreq.2 atoms and a phosphorescent compd.; polymers with repeating units described by the general formulas I and II (Ar = arylene or divalent heterocyclic group; R1 and R2 = independently selected H or substituent; n = 0-3; q = 0-5; and m = 0-5), which may be employed as the heterocyclic compds. in the devices, are also described. The devices may also employ polymers of heterocyclic compds. from which AR is absent. The phosphorescent compd. may be an org. metal complex.

IT **422574-85-4**

(**light-emitting** devices with emitting layers including heterocyclic compds. and phosphorescent materials and heterocycle deriv. polymers for them)

RN 422574-85-4 HCA

CN 9H-Carbazole, 9,9'-[5-(1-[1,1'-biphenyl]-2-yl)-1H-imidazo[4,5-b]pyrazin-2-yl)-1,3-phenylene]bis- (9CI) (CA INDEX NAME)



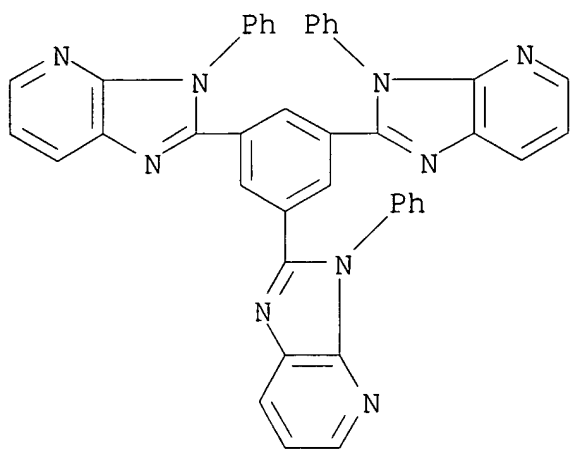
IT 313950-73-1P 328238-10-4P 358974-66-0P

377092-06-3P 377092-10-9P

(**light-emitting** devices with emitting layers including heterocyclic compds. and phosphorescent materials and heterocycle deriv. polymers for them)

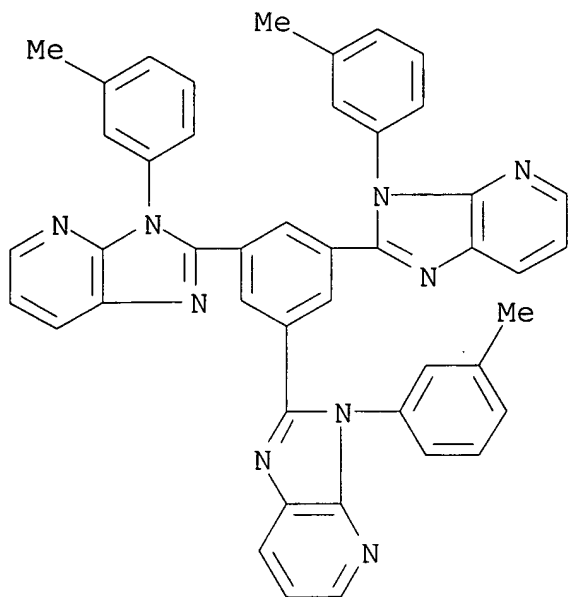
RN 313950-73-1 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-phenyl- (9CI) (CA INDEX NAME)



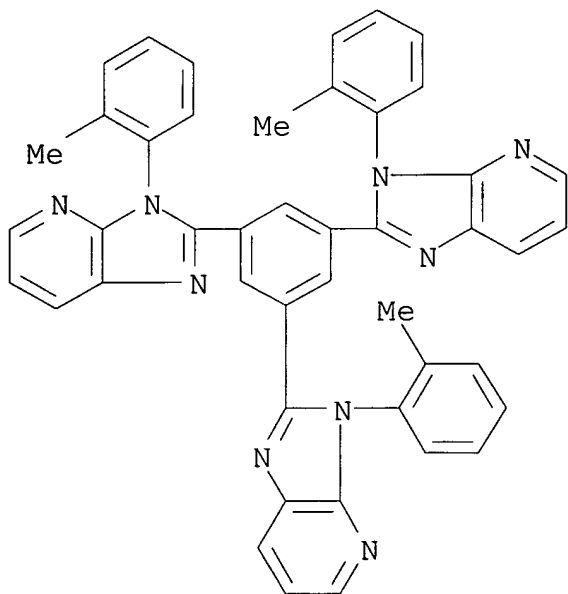
RN 328238-10-4 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(3-methylphenyl)- (9CI) (CA INDEX NAME)



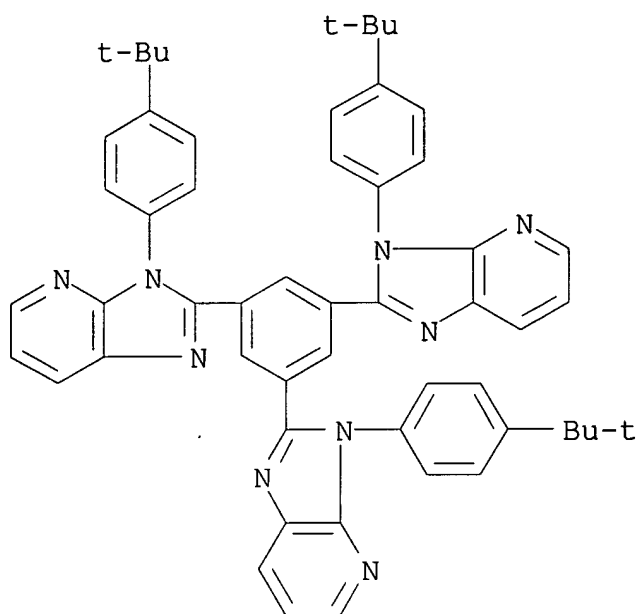
RN 358974-66-0 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-methylphenyl)- (9CI) (CA INDEX NAME)



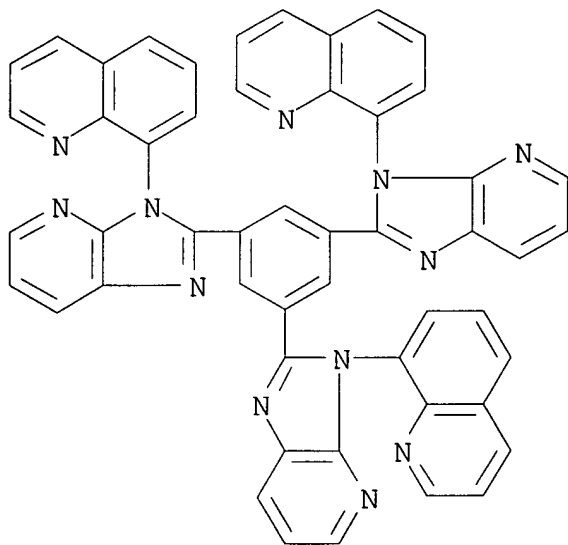
RN 377092-06-3 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-[4-(1,1-dimethylethyl)phenyl]- (9CI) (CA INDEX NAME)



RN 377092-10-9 HCA

CN Quinoline, 8,8',8''-[1,3,5-benzenetriyltris(3H-imidazo[4,5-b]pyridine-2,3-diyl)]tris- (9CI) (CA INDEX NAME)



IC ICM H05B033-14

ICS C08F026-06

INCL 428690000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 27, 28, 38, 76

- ST **electroluminescent** device heterocycle phosphorescent compd  
mixt active layer; polymer heterocycle phosphorescent compd mixt  
active layer **electroluminescent** device
- IT Phosphorescent substances  
(**light-emitting** devices with emitting layers  
including heterocyclic compds. and phosphorescent materials and  
heterocycle deriv. polymers for them)
- IT Polycarbonates, uses  
(**light-emitting** devices with emitting layers  
including heterocyclic compds. and phosphorescent materials and  
heterocycle deriv. polymers for them)
- IT **Electroluminescent** devices  
(org.; **light-emitting** devices with emitting  
layers including heterocyclic compds. and phosphorescent  
materials and heterocycle deriv. polymers for them)
- IT 147-14-8, Copper phthalocyanine 2085-33-8, Tris(8-  
hydroxyquinolinato)aluminum 4733-39-5, Bathocuproine 7429-90-5,  
Aluminum, uses 7789-24-4, Lithium fluoride, uses 12033-89-5,  
Silicon nitride, uses 15082-28-7 24964-91-8,  
Tris(4-bromophenyl)aminium hexachloroantimonate 25067-59-8,  
Poly(N-vinylcarbazole) 37271-44-6 38215-36-0, Coumarin-6  
50926-11-9, ITO 51269-91-1 58328-31-7 65181-78-4,  
N,N'-Bis(3-methylphenyl)-N,N'-diphenylbenzidine 94928-86-6  
153838-48-3 173394-18-8 182069-71-2 343978-78-9 350025-75-1  
350025-76-2 350025-78-4 350025-79-5 359014-69-0 370878-69-6  
377092-13-2 422574-54-7, Silicon nitride oxide (SiN<sub>0.300.7</sub>)  
422574-58-1 422574-60-5 422574-62-7 422574-66-1 422574-67-2  
422574-68-3 422574-70-7 422574-72-9 422574-73-0 422574-74-1  
422574-76-3 422574-77-4 422574-78-5 422574-84-3  
**422574-85-4** 422574-86-5 422574-87-6 422574-88-7  
422574-89-8 422574-90-1 423117-91-3 423117-92-4 423117-94-6  
423117-96-8 423117-97-9 423117-99-1 423118-00-7 423118-01-8  
423118-03-0 423118-05-2 423721-05-5 423721-07-7 423721-09-9  
(**light-emitting** devices with emitting layers  
including heterocyclic compds. and phosphorescent materials and  
heterocycle deriv. polymers for them)
- IT **313950-73-1P 328238-10-4P 358974-66-0P**  
377092-02-9P **377092-06-3P 377092-10-9P**  
422574-56-9P 422574-64-9P 422574-83-2P  
(**light-emitting** devices with emitting layers  
including heterocyclic compds. and phosphorescent materials and  
heterocycle deriv. polymers for them)
- IT 62-53-3, Aniline, reactions 95-53-4, o-Toluidine, reactions  
104-15-4, p-Toluenesulfonic acid, reactions 108-44-1, m-Toluidine,  
reactions 578-66-5, 8-Aminoquinoline 586-75-4, 4-Bromobenzoyl  
chloride 603-35-0, Triphenylphosphine, reactions 769-92-6  
876-08-4, 4-Chloromethylbenzoyl chloride 2039-82-9, 4-Bromostyrene

2156-04-9, 4-Vinylphenylboronic acid 2351-37-3,  
4,4'-Biphenyldicarbonyl chloride 3842-55-5, 2-Chloro-4,6-diphenyl-  
1,3,5-triazine 4422-95-1, 1,3,5-Benzenetricarbonyl trichloride  
5470-18-8, 2-Chloro-3-nitropyridine

(**light-emitting** devices with emitting layers  
including heterocyclic compds. and phosphorescent materials and  
heterocycle deriv. polymers for them)

IT 34949-41-2P 54696-64-9P 54696-67-2P 78750-58-0P 350025-73-9P  
350025-74-0P 377092-01-8P 377092-03-0P 377092-04-1P  
377092-05-2P 377092-07-4P 377092-08-5P 422574-55-8P  
422574-61-6P 422574-63-8P 422574-79-6P 422574-80-9P  
422574-81-0P 422574-82-1P

(**light-emitting** devices with emitting layers  
including heterocyclic compds. and phosphorescent materials and  
heterocycle deriv. polymers for them)

IT 50851-57-5  
(polyethylene dioxythiophene doped with; **light-**  
**emitting** devices with emitting layers including  
heterocyclic compds. and phosphorescent materials and heterocycle  
deriv. polymers for them)

IT 126213-51-2, Poly(3,4-ethylenedioxythiophene)  
(polystyrene sulfonate-doped; **light-emitting**  
devices with emitting layers including heterocyclic compds. and  
phosphorescent materials and heterocycle deriv. polymers for  
them)

L35 ANSWER 42 OF 57 HCA COPYRIGHT 2005 ACS on STN

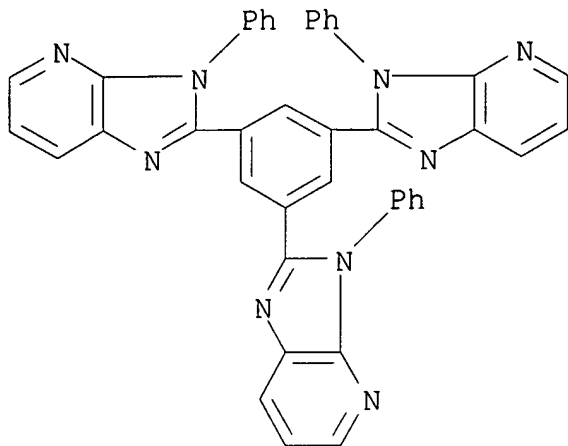
136:207516 **Light-emitting** element and iridium  
complex. Igarashi, Tatsuya; Ise, Toshihiro; Miyashita, Yousuke;  
Fujimura, Hidetoshi; Okada, Hisashi; Mishima, Masayuki; Qiu, Xuepeng  
(Fuji Photo Film Co., Ltd., Japan). U.S. Pat. Appl. Publ. US  
2002024293 A1 **20020228**, 18 pp. (English). CODEN: USXXCO.  
APPLICATION: US 2001-905996 20010717. PRIORITY: JP 2000-216338  
20000717.

AB **Light-emitting** elements are described which have  
an external quantum efficiency of .gtoreq.5% and a **light**  
**emission** max. wavelength .ltoreq.500 nm; devices  
incorporating phosphorescent materials having phosphorescence  
quantum yields of .gtoreq.70% at 20.degree. are also described.  
Preferably the devices include .gtoreq.1 iridium complex with  
.gtoreq.1 ligand selected from 2-(4-fluorophenyl)pyridine or its  
derivs. Iridium complexes with .gtoreq.1 ligand selected from  
2-(4-fluorophenyl)pyridine or its derivs., including  
2-(2,4-difluorophenyl)pyridine and its derivs., are also described.

IT **313950-73-1**  
(**light-emitting** elements and iridium  
complexes of fluorophenylpyridine derivs.)

RN 313950-73-1 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-phenyl- (9CI) (CA INDEX NAME)



IC ICM H01J001-62

ICS C07F015-00

INCL 313483000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 76, 78

ST fluorophenylpyridine iridium complex **light emitting** element

IT **Electroluminescent** devices

Phosphorescent substances

(**light-emitting** elements and iridium complexes of fluorophenylpyridine derivs.)

IT 7429-90-5, Aluminum, uses 7789-24-4, Lithium fluoride, uses 37271-44-6 50926-11-9, ITO 65181-78-4, TPD 123847-85-8 148044-07-9 **313950-73-1** 342638-54-4 351863-09-7

(**light-emitting** elements and iridium complexes of fluorophenylpyridine derivs.)

IT 370878-69-6P 376367-95-2P 391611-76-0P 391665-84-2P

(**light-emitting** elements and iridium complexes of fluorophenylpyridine derivs.)

IT 123-54-6, Acetylacetone, reactions 15635-87-7 58861-53-3, 2-(4-Fluorophenyl)pyridine 391250-41-2 391604-55-0 391611-77-1

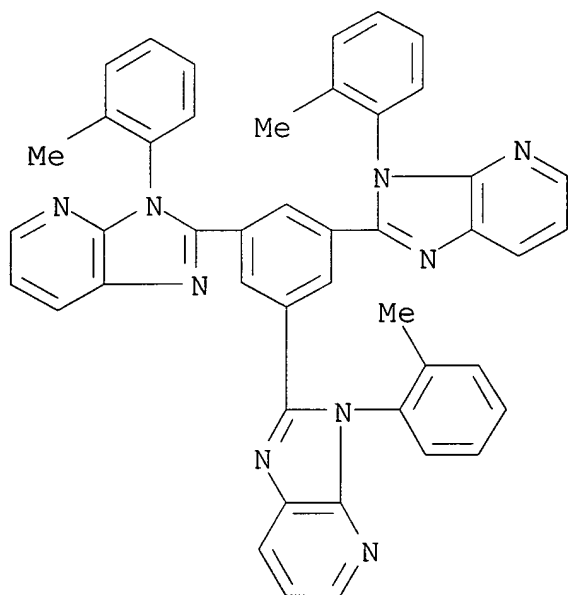
(**light-emitting** elements and iridium complexes of fluorophenylpyridine derivs.)

L35 ANSWER 43 OF 57 HCA COPYRIGHT 2005 ACS on STN

136:191493 Organic **electroluminescent** device containing ortho-metalated complex. Mishima, Masayuki (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002056976 A2 **20020222**, 10 pp. (Japanese). CODEN: JKXXAF. APPLICATION:

JP 2000-240950 20000809.

- AB The device has an org. compd. layer including a hole-transporting layer and a **light-emitting** layer contg. an ortho-metallated complex and an **electron-transporting** material. Preferably, the ortho-metallated complex is Ir complex. Triplet excitation is effectively used in the device, and it shows high brightness and luminous efficiency. The device is useful for large displays, back lights, and so on.
- IT **358974-66-0**, 2,2',2''-(1,3,5-Benzenetriyl) tris[3-(2-methylphenyl)-3H-imidazo[4,5-b]pyridine (**electron-transporting** material; org. **electroluminescent** device contg. orthometallated complex in **light-emitting** layer)
- RN 358974-66-0 HCA
- CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl) tris[3-(2-methylphenyl)- (9CI) (CA INDEX NAME)



- IC ICM H05B033-14  
ICS C09K011-06; H05B033-10; H05B033-22
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
- ST org **electroluminescent** device orthometallated complex  
luminous efficiency; iridium complex org  
**electroluminescent** device **luminous** efficiency
- IT **Electroluminescent** devices  
(org. **electroluminescent** device contg. orthometallated complex in **light-emitting** layer)
- IT 58328-31-7, 4,4'-N,N'-Dicarbazolylbiphenyl **358974-66-0**,



2,2',2''-(1,3,5-Benzenetriyl) tris[3-(2-methylphenyl)-3H-imidazo[4,5-b]pyridine

(**electron-transporting** material; org.

**electroluminescent** device contg. orthometalated complex in **light-emitting** layer)

IT 25067-59-8, Polyvinylcarbazole

(hole-transporting material; org. **electroluminescent** device contg. orthometalated complex in **light-emitting** layer)

IT 94928-86-6, Tris(2-phenylpyridine)iridium

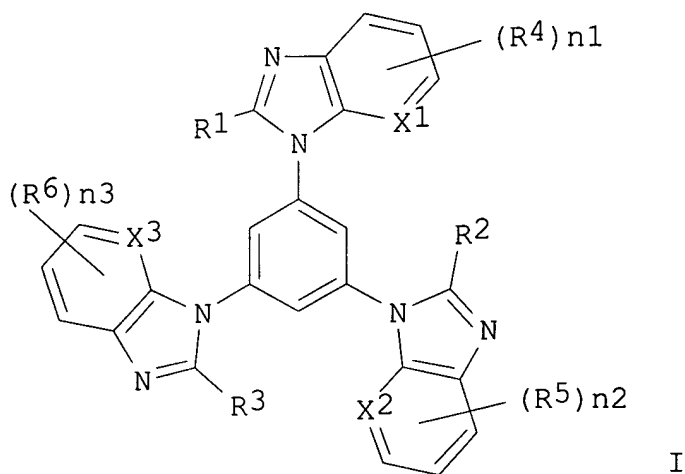
(org. **electroluminescent** device contg. orthometalated complex in **light-emitting** layer)

L35 ANSWER 44 OF 57 HCA COPYRIGHT 2005 ACS on STN

136:126313 **Light emitting** element and azole

compound. Ise, Toshihiro; Igarashi, Tatsuya; Miyashita, Yousuke; Fujimura, Hidetoshi; Mishima, Masayuki; Okada, Hisashi; Qiu, Xuepeng (Fuji Photo Film Co., Ltd., Japan). Eur. Pat. Appl. EP 1175128 A2 **20020123**, 96 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 2001-117288 20010717. PRIORITY: JP 2000-216339 20000717.

GI



AB The title azole compds. are described by the general formula I (R1-3 = independently selected H or aliph. hydrocarbon; R4-6 = independently selected substituents; n1-3 = 0-3; X1-3 and Y1-3 = independently selected N or C-R groups; and R = independently

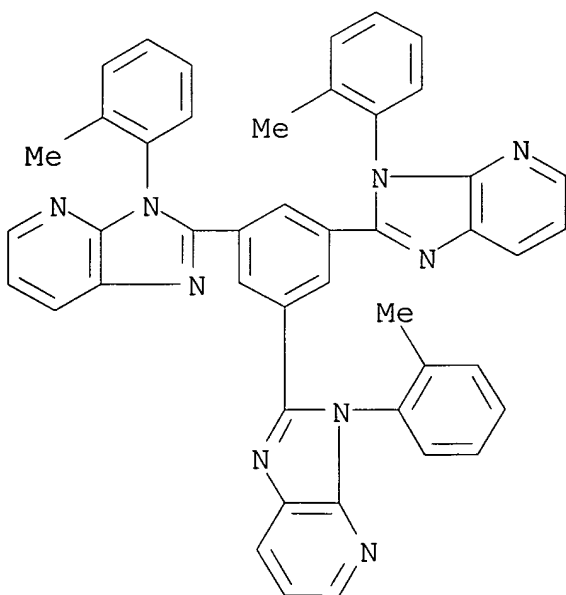
selected H or substituents). **Light-emitting** elements which comprise at least a **light-emitting** layer contg. a **light-emitting** material and a host material and having a max. emission wavelength of .ltoreq.500 nm are described in which the min. excitation triplet energy level of the host material is higher than the min. excitation triplet energy level of the **light-emitting** material. The elements may further comprise a layer which is disposed adjacent to the **light-emitting** layer and contains an org. material, wherein the min. excitation triplet energy level of the org. material is higher than the min. excitation triplet energy level of each of materials which constitute the **light emitting** layer. Preferably, the material in the layer adjacent to the **light-emitting** layer comprises the azole compds. I.

IT 358974-66-0

(org. **electroluminescent** devices and azole compds. useable in them)

RN 358974-66-0 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-methylphenyl)- (9CI) (CA INDEX NAME)



IC ICM H05B033-14

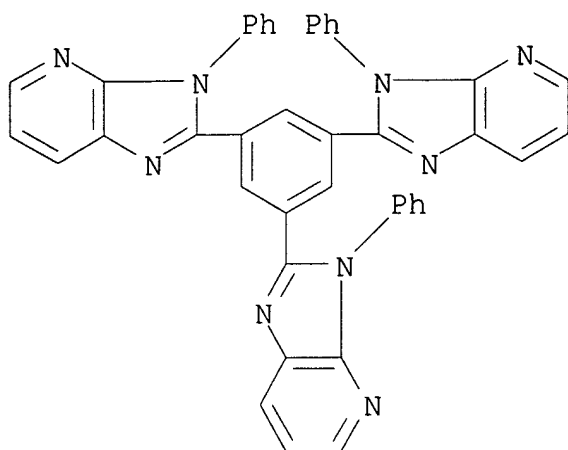
ICS H01L051-20; C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 28, 76

ST azole compd; benzoazole deriv; org **electroluminescent**

- device
- IT Heterocyclic compounds  
(nitrogen, five-membered, derivs.; org.  
**electroluminescent** devices and azole compds. useable in  
them)
- IT **Electroluminescent** devices  
(org.; org. **electroluminescent** devices and azole  
compds. useable in them)
- IT 7429-90-5, Aluminum, uses 7789-24-4, Lithium fluoride (LiF), uses  
50926-11-9, Indium tin oxide 58328-31-7 65181-78-4 123847-85-8  
148044-07-9 205327-13-5 255824-45-4 **358974-66-0**  
391611-78-2  
(org. **electroluminescent** devices and azole compds.  
useable in them)
- IT 351863-09-7P 370878-69-6P 376367-95-2P 391252-53-2P  
391611-76-0P 391665-84-2P  
(org. **electroluminescent** devices and azole compds.  
useable in them)
- IT 75-36-5, Acetylchloride 108-77-0, Cyanuric chloride 121-44-8,  
Triethylamine, reactions 123-54-6, Acetylacetone, reactions  
615-15-6, 2-Methylbenzimidazole 13716-12-6, Tri-tert-  
butylphosphine 15635-87-7 58861-53-3, 2-(4-Fluorophenyl)pyridine  
391250-41-2 391250-76-3 391604-55-0 391611-77-1  
(org. **electroluminescent** devices and azole compds.  
useable in them)
- L35 ANSWER 45 OF 57 HCA COPYRIGHT 2005 ACS on STN
- 136:61299 **Electroluminescent** device using styrylamines. Arai,  
Kazumi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho  
JP 2001354955 A2 **20011225**, 33 pp. (Japanese). CODEN:  
JKXXAF. APPLICATION: JP 2000-177761 20000614.
- AB The invention relates to a red-emitting **electroluminescent**  
device comprising R1R2R3N [R1-3 = (un)substituted aryl, heterocyclyl,  
aliph. hydrocarbyl; .gtoreq.2 of R1-3 is aryl or heterocyclyl;  
.gtoreq.1 of R1-3 is aryl or heterocyclyl formed by .gtoreq.3 rings;  
.gtoreq.2 of R1-3 may form a ring; .gtoreq.1 R1-3 is substituted by  
a group (5 - 7 membered ring):C(R4)(CR5:CR6)m- (R4-6 = H,  
substituent; m = 0, 1 or 2)]. The red luminous component offers  
superior in color purity.
- IT **313950-73-1**  
(**electroluminescent** devices using styrylamines and)
- RN 313950-73-1 HCA
- CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-  
phenyl- (9CI) (CA INDEX NAME)

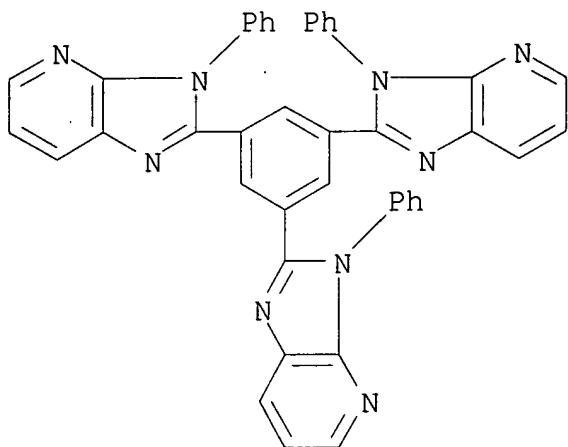


- IC ICM C09K011-06  
ICS C09K011-06; C07C225-22; C07D209-88; C07D333-36; C07D401-12;  
C07D409-12; C07D413-12; C07D417-12; C07D471-04; H05B033-14
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 74
- ST styrylamine red emitting **electroluminescent** device
- IT **Electroluminescent** devices  
Luminescence  
(of red **light-emitting** component using chem. compds. and styrylamines)
- IT 382601-08-3P 382601-09-4P 382601-10-7P 382601-11-8P  
382601-12-9P 382601-13-0P  
(**electroluminescent** devices using styrylamines)
- IT 852-38-0, PBD 905-62-4, 2,5-Bis(1-naphthyl)-1,3,4-oxadiazole  
25067-59-8, Poly(N-vinylcarbazole) 65181-78-4, TPD  
**313950-73-1**  
(**electroluminescent** devices using styrylamines and)
- L35 ANSWER 46 OF 57 HCA COPYRIGHT 2005 ACS on STN
- 136:12632 New heterocyclic compound for **electroluminescent** device. Okada, Hisashi; Ise, Toshihiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001335776 A2 **20011204**, 52 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-218967 20000719. PRIORITY: JP 1999-207957 19990722; JP 2000-80734 20000322.
- AB The invention relates to new heterocyclic compds., suited for use in making an **electroluminescent** device, represented by L-(A)<sub>m</sub> [A = heterocyclic group having .gtoreq.2 arom. hetero ring condensed; m = integer .gtoreq. 2; L = bonding group].
- IT **313950-73-1P 328238-10-4P 358974-66-0P**  
**377092-06-3P 377092-10-9P 377092-12-1P**

(in prepn. of new heterocyclic compd. for  
**electroluminescent** device)

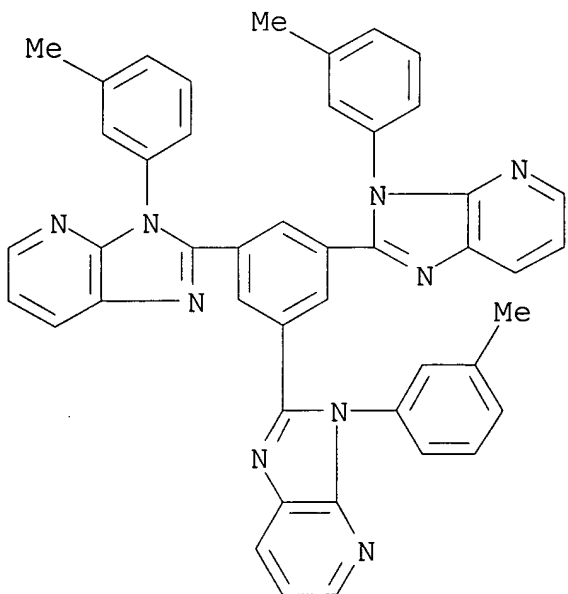
RN 313950-73-1 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-phenyl]- (9CI) (CA INDEX NAME)



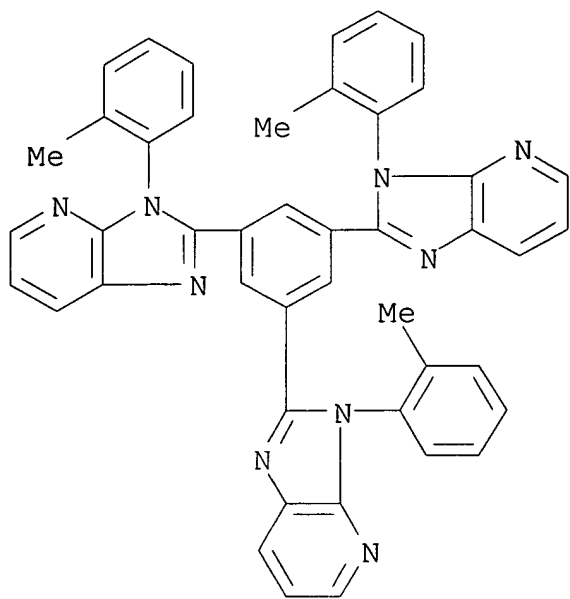
RN 328238-10-4 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(3-methylphenyl)- (9CI) (CA INDEX NAME)

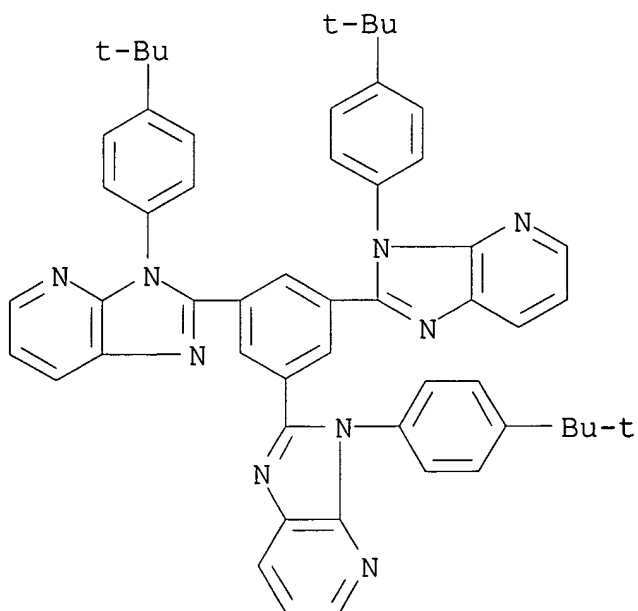


RN 358974-66-0 HCA

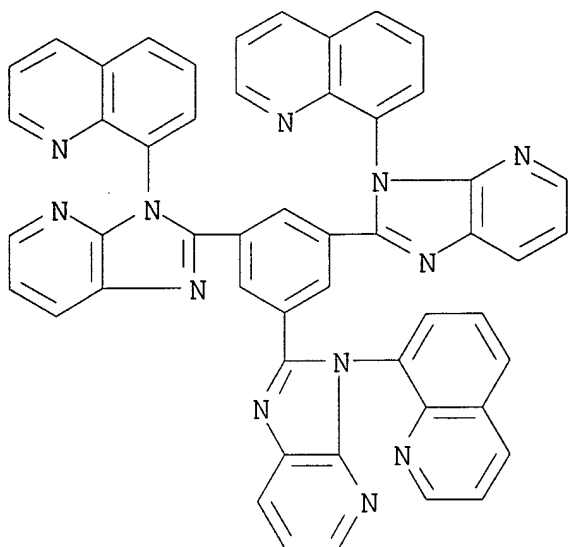
CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-methylphenyl)- (9CI) (CA INDEX NAME)



RN 377092-06-3 HCA  
 CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-[4-(1,1-dimethylethyl)phenyl]- (9CI) (CA INDEX NAME)

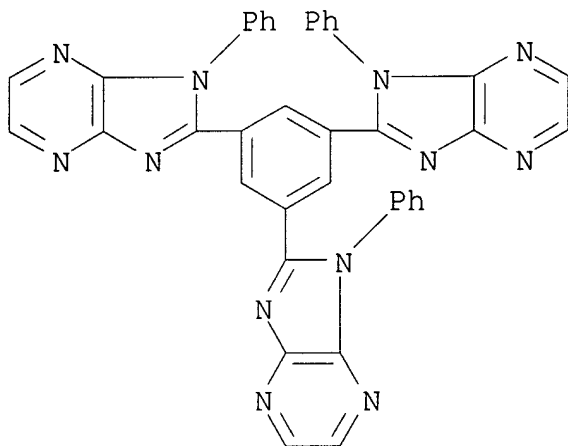


RN 377092-10-9 HCA  
 CN Quinoline, 8,8',8''-[1,3,5-benzenetriyltris(3H-imidazo[4,5-b]pyridine-2,3-diyl)]tris- (9CI) (CA INDEX NAME)



RN 377092-12-1 HCA

CN 1H-Imidazo[4,5-b]pyrazine, 2,2',2''-(1,3,5-benzenetriyl)tris[1-phenyl- (9CI) (CA INDEX NAME)



IC ICM C09K011-06

ICS C09K011-06; C07D519-00; C07F007-08; C07F007-30; H05B033-14;  
H05B033-22; C08F012-26; C08F226-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 28

ST **electroluminescent** device heterocyclic compd

IT Luminescent substances

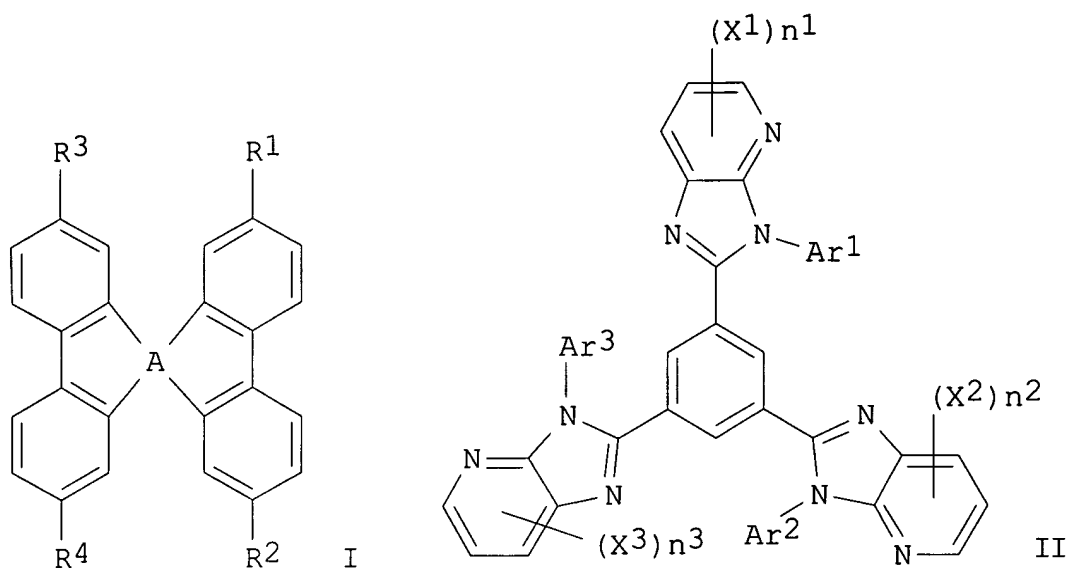
(**electroluminescent**; new heterocyclic compd. for  
**electroluminescent** device)

- IT Heterocyclic compounds  
(for **electroluminescent** device)
- IT Dehydration reaction  
(in prepn. of new heterocyclic compd. for  
**electroluminescent** device)
- IT **Electroluminescent** devices  
(new heterocyclic compd. for **electroluminescent** device)
- IT **313950-73-1P 328238-10-4P 358974-66-0P**  
**377092-02-9P 377092-06-3P 377092-10-9P**  
**377092-11-0P 377092-12-1P 377092-13-2P 377092-14-3P**  
**377092-15-4P 377092-16-5P 377092-17-6P**  
(in prepn. of new heterocyclic compd. for  
**electroluminescent** device)
- IT 62-53-3, Aniline, reactions 95-53-4, o-Toluidine, reactions  
108-44-1, m-Toluidine, reactions 578-66-5, 8-Aminoquinoline  
769-92-6, 4-tert-Butylaniline 2351-37-3, 4,4'-  
Biphenyldicarbonylchloride 4422-95-1, Trimesic acid trichloride  
5470-18-8, 2-Chloro-3-nitropyridine 57863-69-1 349666-24-6  
(in prepn. of new heterocyclic compd. for  
**electroluminescent** device)
- IT 34949-41-2P 54696-64-9P 54696-67-2P 78750-58-0P 350025-83-1P  
350025-84-2P 377092-01-8P 377092-04-1P 377092-05-2P  
377092-07-4P 377092-08-5P 377092-09-6P  
(in prepn. of new heterocyclic compd. for  
**electroluminescent** device)
- IT 471-34-1, Calcium carbonate, reactions 6192-52-5,  
p-Toluenesulfonic acid monohydrate 7775-14-6, Sodium hydrosulfite  
13454-89-2, Copper iodate  
(in prepn. of new heterocyclic compd. for  
**electroluminescent** device)
- IT 377092-03-0P  
(in prepn. of new heterocyclic compd. for  
**electroluminescent** device)

L35 ANSWER 47 OF 57 HCA COPYRIGHT 2005 ACS on STN  
135:378557 Organic **electroluminescent** component. Ishii,  
Masahiko; Tokito, Seiji; Noda, Hiroshi; Taga, Yasunori; Okada,  
Hisashi; Kimura, Makoto; Sawaki, Yasuhiko (Toyota Central Research  
and Development Laboratories, Inc., Japan; Fuji Photo Film Co.,  
Ltd.). Jpn. Kokai Tokkyo Koho JP 2001326079 A2 **20011122**,  
2218 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-145774  
20000517.

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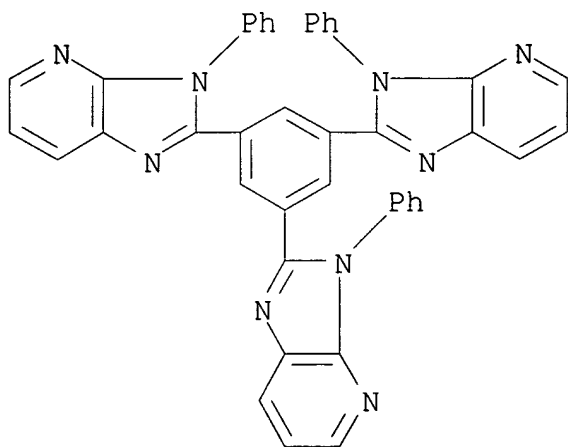
AB The invention refers to an org. **electroluminescent** component comprising I [R<sup>1</sup>-4 = substituents; A = .gtoreq. 2 C atoms, .gtoreq. 1 carbon substituted with non-carbon atoms or form a biphenyl deriv.] as a hole transport luminescent layer, and II [Ar<sup>1</sup>-3 = aryl or arom. heterocycle; X<sup>1</sup>-3 = substituents; n<sub>1</sub>-3 = 0 - 3] as a **electron transport** layer.

IT **313950-73-1 358974-66-0**

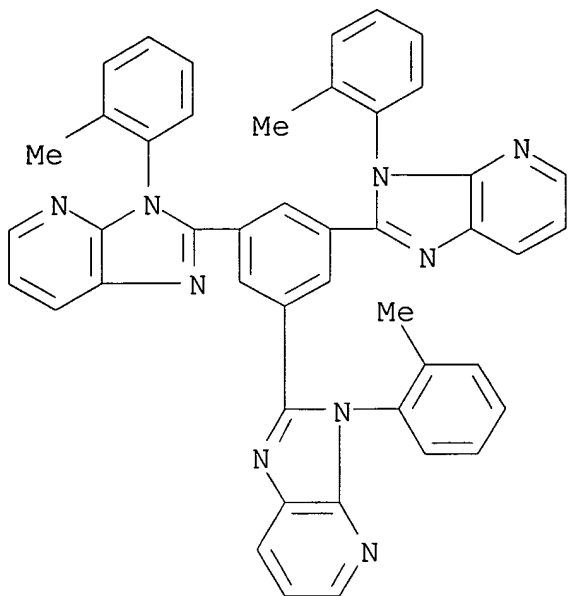
(org. **electroluminescent** component)

RN 313950-73-1 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-phenyl- (9CI) (CA INDEX NAME)



RN 358974-66-0 HCA  
CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-methylphenyl)- (9CI) (CA INDEX NAME)



IC ICM H05B033-14  
ICS C09K011-06; H05B033-22; C07C211-61; C07D471-04; C07D519-00  
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
ST **electroluminescent** device synthesis  
IT **Electroluminescent** devices  
Synthesis  
(org. **electroluminescent** component)  
IT 19205-19-7, N,N'-Dimethylquinacridone 51325-91-8, DCM1  
267884-21-9 267884-22-0 **313950-73-1 358974-66-0**  
(org. **electroluminescent** component)  
IT 90-30-2, 1-Naphthyl phenyl amine 122-39-4, Diphenylamine, reactions 14348-75-5, 2,7-Dibromo-9-fluorenone  
(org. **electroluminescent** component)  
IT 113933-91-8P 261517-63-9P 267884-20-8P  
(org. **electroluminescent** component)  
  
L35 ANSWER 48 OF 57 HCA COPYRIGHT 2005 ACS on STN  
135:364352 **Electroluminescent** device. Mishima, Masayuki (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001319779 A2 **20011116**, 7 pp. (Japanese). CODEN: JKXXAF.  
APPLICATION: JP 2000-133529 20000502.  
AB The invention relates to an **electroluminescent** device comprising .gtoreq.2 **electroluminescent** layers, suited for

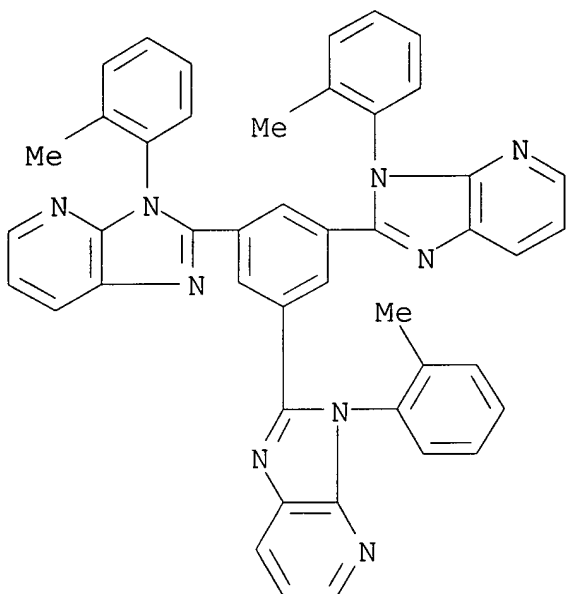
use in making a full color display, a backlight, a flat illumination device, etc., wherein the ortho-metal complex is contained in the **electroluminescent** layers as an **electroluminescent** substance.

IT **358974-66-0**

(org. **electroluminescent** device)

RN 358974-66-0 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-methylphenyl)- (9CI) (CA INDEX NAME)



IC ICM H05B033-14

ICS C09K011-06; H05B033-22

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

Section cross-reference(s): 74

ST **electroluminescent** device ortho metal complex

IT **Electroluminescent** devices

(org. **electroluminescent** device)

IT Coordination compounds

(ortho-metal; org. **electroluminescent** device)

IT 58328-31-7, 4,4'-N,N'-Dicarbazolylbiphenyl 65181-78-4,  
N,N'-Bis[3-methylphenyl]-N,N'-diphenylbenzidine 123847-85-8  
**358974-66-0**

(org. **electroluminescent** device)

IT 94928-86-6, Tris(2-phenylpyridine)iridium

(org. **electroluminescent** device)

L35 ANSWER 49 OF 57 HCA COPYRIGHT 2005 ACS on STN

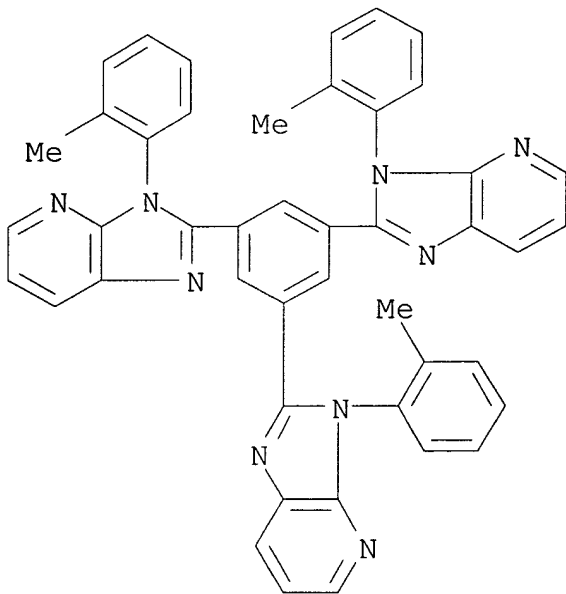
135:364343 **Electroluminescent** device. Mishima, Masayuki (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001319780 A2 **20011116**, 7 pp. (Japanese). CODEN: JKXXAF.  
APPLICATION: JP 2000-133530 20000502.

AB The invention relates to an **electroluminescent** device comprising .gtoreq.2 **electroluminescent** substances contained in an **electroluminescent** layer(s), suited for use in making a full color display, a backlight, a flat illumination device, etc., wherein, at least, one of the **electroluminescent** substances is an ortho-metal complex.

IT **358974-66-0**  
(**electroluminescent** device comprising .gtoreq.2 **electroluminescent** substances in **electroluminescent** layer(s))

RN 358974-66-0 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-methylphenyl)- (9CI) (CA INDEX NAME)



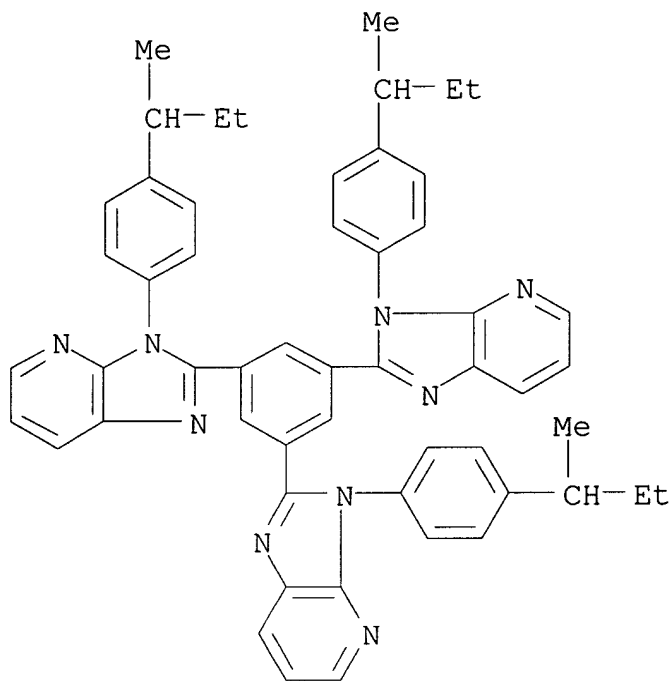
IC ICM H05B033-14  
ICS C09K011-06

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
Section cross-reference(s): 74

ST **electroluminescent** device ortho metal complex

IT **Electroluminescent** devices  
(**electroluminescent** device comprising .gtoreq.2 **electroluminescent** substances in **electroluminescent** layer(s))

- IT Coordination compounds  
(ortho-metal; **electroluminescent** device comprising  
.gtoreq.2 **electroluminescent** substances in  
**electroluminescent** layer(s))
- IT 517-51-1, Rubrene 15082-28-7 25067-59-8, Polyvinylcarbazole  
58328-31-7, 4,4'-N,N'-Dicarbazolylbiphenyl **358974-66-0**  
(**electroluminescent** device comprising .gtoreq.2  
**electroluminescent** substances in  
**electroluminescent** layer(s))
- IT 1450-63-1, 1,1,4,4,-Tetraphenylbutadiene 51325-91-8,  
4-[Dicyanomethylene]-2-methyl-6-[4-dimethylaminostyryl]-4H-pyran  
94928-86-6, Tris[2-phenylpyridine]iridium 337526-95-1  
349666-25-7  
(**electroluminescent** device comprising .gtoreq.2  
**electroluminescent** substances in  
**electroluminescent** layer(s))
- L35 ANSWER 50 OF 57 HCA COPYRIGHT 2005 ACS on STN  
135:310683 Organic **electroluminescent** material, heterocyclic  
compound, and **electroluminescent** device. Taguchi, Toshiki  
(Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP  
2001288172 A2 **20011016**, 19 pp. (Japanese). CODEN:  
JKXXAF. APPLICATION: JP 2000-98821 20000331.
- AB The org. **electroluminescent** material contains .gtoreq.1 of  
the claimed electron-deficient heterocyclic arom. compd. involving  
.gtoreq.2 asym. C. The **electroluminescent** device uses the  
material contained in .gtoreq.1 **electron-**  
**transporting** layer, .gtoreq.1 electron-implanting layer, or  
.gtoreq.1 **light-emitting** layer sandwiched  
between a pair of electrodes. The device has high brightness and  
durability.
- IT **366804-24-2**  
(arom. heterocyclic compd. having asym. carbon as phosphor for  
**electroluminescent** device)
- RN 366804-24-2 HCA  
CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-[4-(1-  
methylpropyl)phenyl]- (9CI) (CA INDEX NAME)



- IC ICM C07D235-18  
 ICS C07D249-08; C07D263-54; C07D271-06; C07D271-10; C07D277-64;  
 C07D471-06; C07D519-00; H05B033-14; H05B033-22; C09K011-06
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
 Section cross-reference(s): 28
- ST org **electroluminescent** material electron deficient compd;  
 arom heterocyclic **electroluminescent** material asym carbon;  
**electroluminescent** device arom heterocyclic compd
- IT **Electroluminescent** devices  
 (arom. heterocyclic compd. having asym. carbon as phosphor for **electroluminescent** device)
- IT Phosphors  
 (**electroluminescent**; arom. heterocyclic compd. having asym. carbon as phosphor for **electroluminescent** device)
- IT 366804-19-5 366804-20-8 366804-21-9 366804-22-0  
**366804-24-2**  
 (arom. heterocyclic compd. having asym. carbon as phosphor for **electroluminescent** device)
- IT 366804-23-1P  
 (arom. heterocyclic compd. having asym. carbon as phosphor for **electroluminescent** device)
- IT 1493-27-2, o-Fluoronitrobenzene 4422-95-1, 1,3,5-Benzenetricarbonyl trichloride 30273-11-1  
 (for prepn. of arom. heterocyclic compd. having asym. carbon as

phosphor for **electroluminescent** device)  
IT 366804-25-3P 366804-26-4P 366804-27-5P  
(intermediate; for prepn. of arom. heterocyclic compd. having  
asym. carbon as phosphor for **electroluminescent** device)

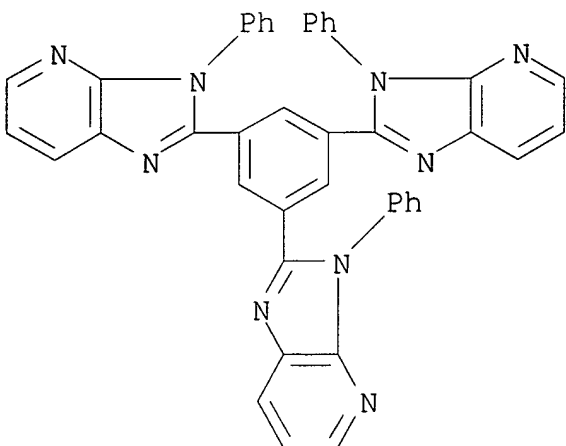
L35 ANSWER 51 OF 57 HCA COPYRIGHT 2005 ACS on STN  
135:296021 Color-converting film and **light-emitting**  
apparatus using the same. Hirai, Hiroyuki (Japan). U.S. Pat. Appl.  
Publ. US 20010028962 A1 **20011011**, 8 pp. (English).  
CODEN: USXXCO. APPLICATION: US 2001-820687 20010330. PRIORITY: JP  
2000-97604 20000331.

AB Color-converting films are described which comprise a  
light-transmittable substrate and a color-converting layer disposed  
thereon, wherein the color-converting layer contains an  
ortho-metalation complex. The color-converting layer may addnl.  
contain a dye and/or a pigment. **Light-emitting**  
app. comprising the color-converting films are also described.

IT **313950-73-1**  
(color-converting films contg. ortho-metalation complexes and  
**light-emitting** app. using them)

RN 313950-73-1 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-  
phenyl- (9CI) (CA INDEX NAME)



IC ICM H05B033-00

ICS G02B005-20

INCL 428690000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related  
Properties)

Section cross-reference(s): 76, 78

ST **electroluminescent** device metal complex color conversion  
film

IT Optical films

(color conversion; color-converting films contg. ortho-metalation complexes and **light-emitting** app. using them)

IT Cyanine dyes

**Electroluminescent** devices

(color-converting films contg. ortho-metalation complexes and **light-emitting** app. using them)

IT Dyes

(xanthene; color-converting films contg. ortho-metalation complexes and **light-emitting** app. using them)

IT 147-14-8, Copper phthalocyanine 7429-90-5, Aluminum, uses 25067-59-8, Poly(N-vinylcarbazole) 50926-11-9, ITO 123847-85-8, 4,4'-Bis[N-(1-naphthyl)-N-phenylamino]biphenyl **313950-73-1** 350025-79-5

(color-converting films contg. ortho-metalation complexes and **light-emitting** app. using them)

IT 337526-85-9 337526-88-2 343978-78-9 359014-71-4

(color-converting films contg. ortho-metalation complexes and **light-emitting** app. using them)

L35 ANSWER 52 OF 57 HCA COPYRIGHT 2005 ACS on STN

135:233635 **Light-emitting** material comprising orthometalated iridium complex, **light-emitting** device, high efficiency red **light-emitting** device, and novel iridium complex. Igarashi, Tatsuya; Kimura, Keizo; Nii, Kazumi (Fuji Photo Film Co., Ltd., Japan). U.S. Pat. Appl. Publ. US 2001019782 A1 **20010906**, 37 pp. (English). CODEN: USXXCO. APPLICATION: US 2000-747933 20001227. PRIORITY: JP 1999-370349 19991227; JP 2000-89274 20000328; JP 2000-298470 20000929; JP 2000-299495 20000929.

AB **Light-emitting** materials comprising orthometalated iridium complexes with .gtoreq.1 ligand comprising a nitrogen-contg. heterocyclic derivs., and the complexes, are described. **Electroluminescent** devices employing the complexes are also described.

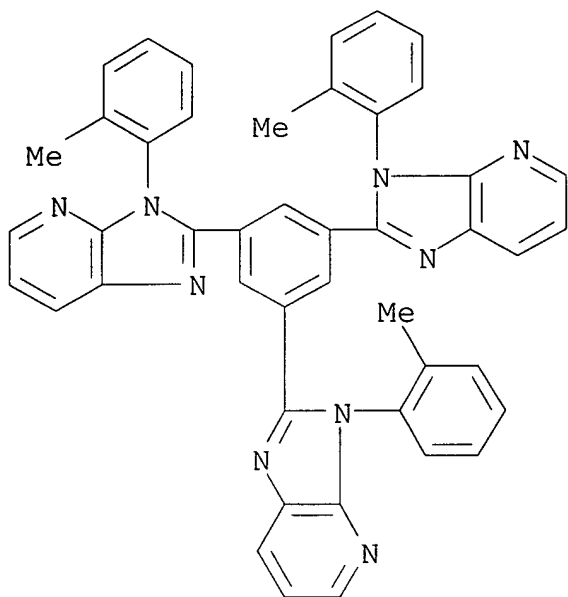
IT **358974-66-0**

(**light-emitting** materials comprising orthometalated iridium complexes and **light-emitting** devices using them and iridium complexes)

RN 358974-66-0 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(2-methylphenyl)- (9CI) (CA INDEX NAME)





IC H05B003-312; C07F015-00; C07D213-02; C07D221-02; C07D247-00;  
C07D009-04

INCL 428690000

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related  
Properties)

Section cross-reference(s): 76, 78

ST luminescent material orthometalated iridium complex;

**electroluminescent** device orthometalated iridium complex

IT **Electroluminescent** devices

Luminescent substances

(**light-emitting** materials comprising  
orthometalated iridium complexes and **light-**  
**emitting** devices using them and iridium complexes)

IT 7429-90-5, Aluminum, uses 15082-28-7 25067-59-8,  
Poly(N-vinylcarbazole) 37271-44-6 50926-11-9, ITO 52352-02-0  
58328-31-7 94928-86-6 123847-85-8, .alpha.-NPD 153838-48-3  
343978-78-9 358974-63-7 **358974-66-0** 359014-71-4  
359014-72-5 359014-73-6 359014-74-7 359014-75-8 359014-77-0  
359014-78-1 359014-79-2

(**light-emitting** materials comprising  
orthometalated iridium complexes and **light-**  
**emitting** devices using them and iridium complexes)

IT 359014-63-4P 359014-64-5P 359014-69-0P

(**light-emitting** materials comprising  
orthometalated iridium complexes and **light-**  
**emitting** devices using them and iridium complexes)

IT 337526-95-1P 359014-65-6P 359014-66-7P 359014-67-8P

359014-68-9P 359014-70-3P 359014-76-9P

(**light-emitting** materials comprising orthometalated iridium complexes and **light-emitting** devices using them and iridium complexes)

IT 101-82-6, 2-Benzylpyridine 123-54-6, Acetylacetone, reactions  
612-96-4, 2-Phenylquinoline 630-08-0, Carbon monoxide, reactions  
1008-89-5, 2-Phenylpyridine 10025-83-9, Iridium trichloride  
16920-56-2 20375-65-9 24702-41-8 47077-29-2

(**light-emitting** materials comprising orthometalated iridium complexes and **light-emitting** devices using them and iridium complexes)

IT 50851-57-5

(polyethylene dioxythiophene doped with; **light-emitting** materials comprising orthometalated iridium complexes and **light-emitting** devices using them and iridium complexes)

IT 126213-51-2, Poly(3,4-ethylenedioxythiophene)

(polystyrene sulfonate-doped; **light-emitting** materials comprising orthometalated iridium complexes and **light-emitting** devices using them and iridium complexes)

L35 ANSWER 53 OF 57 HCA COPYRIGHT 2005 ACS on STN

135:202768 Luminescent material, luminescent component and amine compound. Arai, Kazumi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001234159 A2 **20010828**, 32 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-48155 20000224.

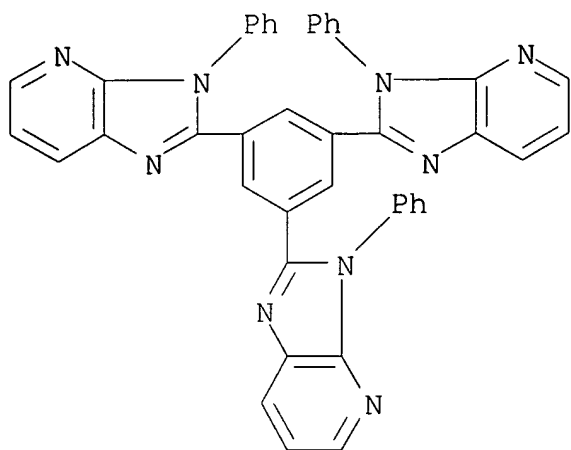
AB The invention refers to an **electroluminescent** material contg. R3R2NAr1CR4:CR5L1CR6:CR7Ar8 [Ar1 = divalent aryl or heterocyclic; R2,3 = aryl, hetero cyclic, aliph. hydrocarbon; Ar1, R2,3 may be joined to form a ring; Ar8 = aryl or heterocyclic which may be substituted with an amine; R4-7 = H, or a univalent, wherein at least one is an electron-withdrawing group with a Hammett .sigma.p value > 0.2; L2 = divalent aryl, heterocyclic or a combined aryl and heterocyclic, vinyl, C:X, silyl, aryl, arom. hetero 5- or 6- membered ring; X = O, S, NRx1 or CRx2Rx3; Rx1,x2,x3 = H or univalent].

IT **313950-73-1**

(luminescent material, luminescent component and amine compd.)

RN 313950-73-1 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-phenyl- (9CI) (CA INDEX NAME)

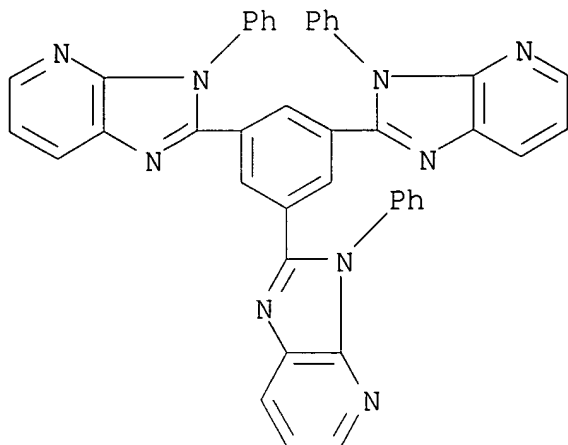


- IC ICM C09K011-06  
 ICS C09K011-06; C07C255-42; C07C255-58; C07C317-48; C07D213-57;  
 C07D223-14; C07D235-16; C07D241-42; C07D263-54; C07D263-56;  
 C07D265-38; C07D271-10; C07D277-64; C07D279-22; C07D285-12;  
 C07D295-16; C07D307-54; C07D307-91; C07D333-24
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
- ST **electroluminescent** device amine
- IT Phosphors  
 (**electroluminescent**; luminescent material, luminescent component and amine compd.)
- IT **Electroluminescent** devices  
 (luminescent material, luminescent component and amine compd.)
- IT 147-14-8, Copper phthalocyanine 852-38-0, PBD 905-62-4, 2,5-Bis(1-naphthyl)-1,3,4-oxadiazole 2085-33-8, Aluminum tris(8-hydroxyquinolinato) 7439-95-4, Magnesium, uses 7440-22-4, Silver, uses 25067-59-8, Poly(N-vinylcarbazole) 27236-84-6, Tetraphenyl butadiene 50926-11-9, ITO 65181-78-4, TPD 123847-85-8, .alpha.-NPD **313950-73-1** 357199-56-5 357199-57-6 357199-58-7 357199-59-8  
 (luminescent material, luminescent component and amine compd.)
- L35 ANSWER 54 OF 57 HCA COPYRIGHT 2005 ACS on STN
- 135:114278 Organic **electroluminescent** device. Kohama, Toru; Makiyama, Akira; Kitazawa, Daisuke (Toray Industries, Inc., Japan). Jpn. Kokai Tokkyo Koho JP 2001196181 A2 **20010719**, 10 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-6934 20000114.
- AB The invention relates to an org. **electroluminescent** device that comprises the fluorescent material contg. an imidazo-heterocyclic frame.
- IT **313950-73-1**  
 (org. **electroluminescent** device comprising fluorescent

material contg. imidazo-heterocyclic frame)

RN 313950-73-1 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-phenyl- (9CI) (CA INDEX NAME)



IC ICM H05B033-14

ICS C09K011-06; G09F009-30; H05B033-22

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST org **electroluminescent** device imidazo heterocyclic compd

IT **Electroluminescent** devices

Fluorescent substances

(org. **electroluminescent** device comprising fluorescent material contg. imidazo-heterocyclic frame)

IT 4733-39-5, 2,9-Dimethyl-4,7-diphenyl-1,10-phenanthroline

7429-90-5, Aluminum, uses 65181-78-4, TPD **313950-73-1**

(org. **electroluminescent** device comprising fluorescent material contg. imidazo-heterocyclic frame)

IT 7439-93-2, Lithium, uses

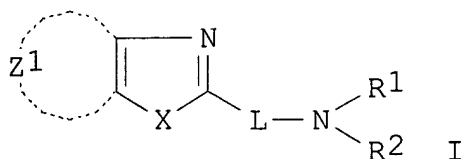
(org. **electroluminescent** device comprising fluorescent material contg. imidazo-heterocyclic frame)

L35 ANSWER 55 OF 57 HCA COPYRIGHT 2005 ACS on STN

135:114270 Novel condensed hetero ring compound and

**electroluminescent** material. Ise, Toshihiro; Okada, Hisashi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001192653 A2 **20010717**, 36 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-89632 20000328. PRIORITY: JP 1999-305733 19991027.

GI



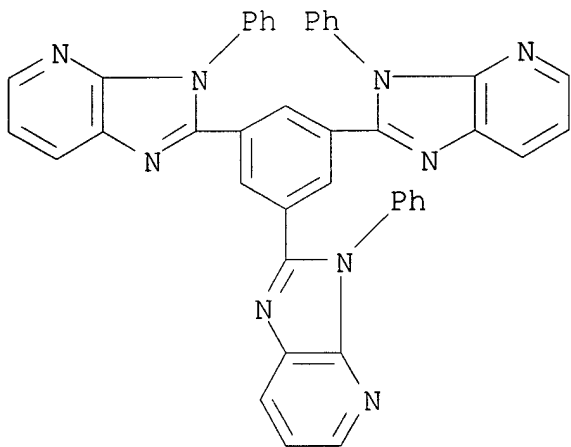
AB The invention refers to a novel condensed hetero ring compd. I [R<sub>1,2</sub> = H, aliph. hydrocarbon, aryl or hetero ring; Z<sub>1</sub> = atoms need to construct a heterocyclic; L = bridging functional group; X = O, S, Se, Trace element or N-R; R = H, aliph. hydrocarbon, aryl or heterocyclic].

IT **313950-73-1**

(novel condensed hetero ring compd. and  
**electroluminescent** material)

RN 313950-73-1 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-phenyl- (9CI) (CA INDEX NAME)



IC ICM C09K011-06

ICS C09K011-06; C07D471-04; C07D519-00; H05B033-14; C09B057-00

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

ST **electroluminescent** material

IT Phosphors

(**electroluminescent**; novel condensed hetero ring compd.  
and **electroluminescent** material)

IT 25067-59-8, Poly(N-vinyl carbazole)

(0novel condensed hetero ring compd. and  
**electroluminescent** material)

IT 15082-28-7, 2-(4-Biphenyl)-5-(4-tert-butylphenyl)-1,3,4-oxadiazole

50926-11-9, ITO 123847-85-8, .alpha.-NPD 192198-85-9  
**313950-73-1**

(novel condensed hetero ring compd. and  
**electroluminescent** material)

IT 350025-75-1P 350025-76-2P 350025-77-3P 350025-78-4P  
350025-79-5P 350025-82-0P

(novel condensed hetero ring compd. and  
**electroluminescent** material)

IT 62-53-3, Aniline, reactions 86-74-8, Carbazole 109-89-7, Diethyl  
amine, reactions 122-39-4, Diphenyl amine, reactions 135-88-6,  
2-Naphthylphenyl amine 586-75-4, 4-Bromobenzoyl chloride  
5470-18-8, 2-Chloro-3-nitropyridine 7681-38-1, Sodium hydrosulfate  
23950-59-6, 3,5-Dibromobenzoyl chloride 29875-73-8,  
9H-Tribenz[b,d,f]azepine 57863-69-1

(novel condensed hetero ring compd. and  
**electroluminescent** material)

IT 34949-41-2P 350025-73-9P 350025-74-0P 350025-80-8P  
350025-81-9P 350025-83-1P 350025-84-2P 350025-85-3P

(novel condensed hetero ring compd. and  
**electroluminescent** material)

L35 ANSWER 56 OF 57 HCA COPYRIGHT 2005 ACS on STN

135:114269 Condensed polycyclic hydrocarbon compound and luminescent  
material. Igarashi, Tatsuya (Fuji Photo Film Co., Ltd., Japan).  
Jpn. Kokai Tokkyo Koho JP 2001192652 A2 **20010717**, 15 pp.  
(Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-3687 20000112.

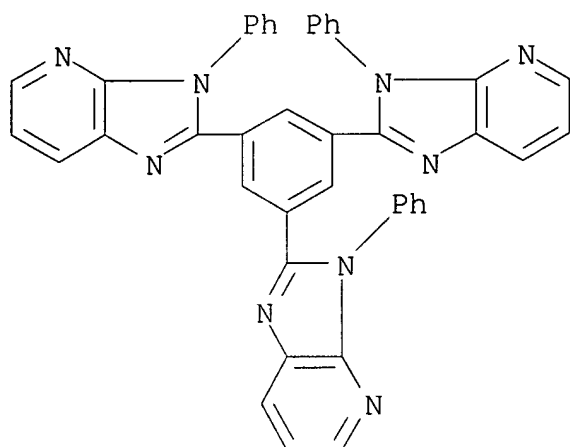
AB The invention refers to a condensed polycyclic hydrocarbon compd.  
R1N(R2)R3 [R1-3 = polycyclic hydrocarbon with at least three rings].

IT **313950-73-1**

(condensed polycyclic hydrocarbon compd. and luminescent  
material)

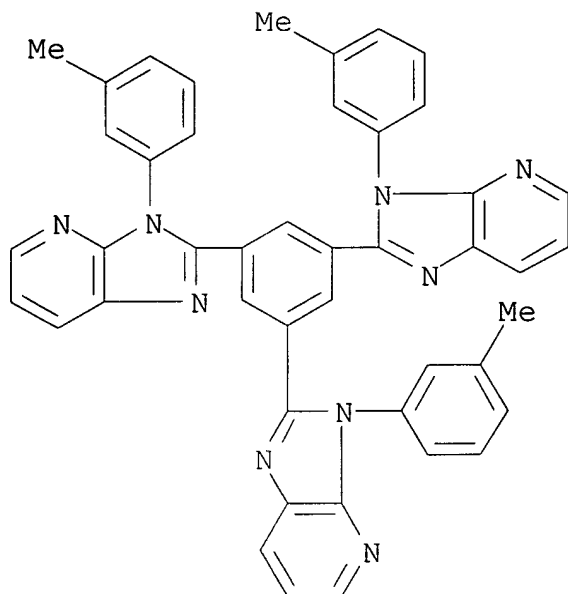
RN 313950-73-1 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-  
phenyl- (9CI) (CA INDEX NAME)



- IC ICM C09K011-06  
ICS C07C211-54; H05B033-14; H05B033-22
- CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
- ST polycyclic **electroluminescent** material
- IT Phosphors  
(**electroluminescent**; condensed polycyclic hydrocarbon compd. and luminescent material)
- IT 852-38-0, PBD 25067-59-8, Polyvinyl carbazole 50926-11-9, ITO 123847-85-8, .alpha.-NPD 213527-39-0 **313950-73-1**  
(condensed polycyclic hydrocarbon compd. and luminescent material)
- L35 ANSWER 57 OF 57 HCA COPYRIGHT 2005 ACS on STN
- 134:214719 Organic **electroluminescent** device. Araki, Yasushi (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001060496 A2 **20010306**, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-236042 19990823.
- AB The invention relates to an org. **electroluminescent** device comprising an org. layer, including an **electron transporting** layer, suited for use as a light source in an exposure app., wherein the ionization potential of the **electron transporting** org. layer is .ltoreq.5.8 eV, and de/dt is .ltoreq.0.30, where de and dt are the thickness of the **electron transporting** layer and total thickness of the org. layer, resp., for enhancing the characteristics on pulsed operation.
- IT **328238-10-4**  
(**electron transporting** layer; org. **electroluminescent** device suited for use in pulsed operation)
- RN 328238-10-4 HCA

CN 3H-Imidazo[4,5-b]pyridine, 2,2',2''-(1,3,5-benzenetriyl)tris[3-(3-methylphenyl)- (9CI) (CA INDEX NAME)



IC ICM H05B033-14  
ICS H05B033-22  
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)  
ST org **electroluminescent** device pulsed **electron transporting** layer  
IT **Electroluminescent** devices  
(org. **electroluminescent** device suited for use in pulsed operation)  
IT 16073-26-0 192198-85-9 **328238-10-4**  
(**electron transporting** layer; org. **electroluminescent** device suited for use in pulsed operation)